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Weekly 2s

### ALLERGIC SENSITIVITY TO THE CASTOR BEAN (*RICINUS COMMUNIS*)

#### SOUTH AFRICAN CASES OF VASOMOTOR RHINITIS AND BRONCHIAL ASTHMA CAUSED BY THE INHALATION OF CASTOR BEAN DUST

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The castor oil plant (*Ricinus communis* Linn.) belongs to the family Euphorbiaceae and is a native of India where it is cultivated in large quantities. It is also grown on a big scale in South America, various parts of Africa, Manchuria, the Levant and Italy. Numerous varieties are described roughly grouped into shrubs and trees or annual herbs according to the climate.

The seeds of the castor oil plant are rounded, oblong and somewhat flattened, from 8-12 mm. or more in length, with an arched dorsal surface and a nearly flat, ventral surface. The width is about  $\frac{1}{3}$  and the thickness about  $\frac{1}{3}$  of the length. The seed coat which is thin and brittle is smooth and glossy varying in colour from greyish-brown to grey mottled with reddish-brown or black spots and stripes.

The seed or 'bean' contains about 50 per cent. of fixed oil consisting of glycerides of ricinoleic, isoricinoleic, stearic and dihydroxystearic acids. The purgative action of castor oil is due to the irritant ricinoleates produced in the intestine after saponification by the pancreatic juice.

The cake of material which is left after the oil has been expressed from the crushed seed contains ricinine, the intensely poisonous albumin ricin and various enzymes including the very active lipase which is utilized commercially for splitting fats and oils.

The oil-free cake, finely ground to a powder and known as 'pomace', is sold as an ingredient for fertilizer on account of its high nitrogen content.

Ricin is highly toxic, as little as one-thousandth of a milligramme per kilogram of body weight producing symptoms on injection. Cases are on record (Koch and Caplan, 1942) of severe symptoms and even death occurring after castor oil beans have been chewed by children and even by adults who attempted to use the whole bean, instead of the oils, as a purgative. By mouth, ricin may prove fatal in a dose of 0.03 gm.

In addition, however, the castor bean contains a powerful allergenic substance which by inhalation may give rise to allergic coryza or bronchial asthma and to the most alarmingly severe local and general reactions if injected into the skin of sensitive persons. Indeed,

castor bean is one of the most dangerous of allergens and its extract should be used with the utmost caution in skin tests and attempted therapeutic desensitization.

Spies and Coulson (1943) demonstrated that the castor bean allergen was a non-toxic, heat-stable polysaccharide-protein fraction representing 1.8% of the de-fatted castor bean meal. Later Spies *et al.* (1944) isolated an essentially carbohydrate-free allergenic protein from castor beans. The allergenic principle is soluble in water but precipitated by alcohol. It is not dialyzable and neither precipitated nor destroyed by boiling.

Castor oil does not contain this allergen and Bennett and Schwartz (1934) showed that castor oil bean-sensitive persons could take the oil with impunity.

Woringer (1944) found that the allergenic principle was present in the leaves as well as in the seeds of the castor oil plant.

Ricin and the allergenic substance are separate and distinct substances and the primary toxic and the anaphylactic elements can be clearly differentiated.

Osborne *et al.* (1905) showed that in animals anaphylactic death due to castor bean was characterized by immediate death with blanched and ballooned lungs whereas, if due to ricin, death occurred within twelve hours after injection with congestion and diffuse haemorrhages in the lungs, and haemorrhages in the abdominal viscera.

Barnard (1930) who described seven patients sensitive to extracts of castor bean, showed that the ricin could be removed from the bean without altering its allergenic activity.

Woringer (1944) confirmed that sensitization resulted from the dust and droplets which entered the mucous membrane and skin, resulting in irritation of the respiratory passages and eyes and giving rise to asthma and urticaria. Such sensitization occurred among those handling castor beans in the laboratory or in industrial plants.

Bernton (1923) described a case of hay fever followed by asthma in an analytical chemist, 27 years of age who, after three years' exposure to castor beans,

developed a sensitivity to them. A wheal 3 mm. in diameter was obtained by skin test with one drop of a 1:250,000 dilution of castor bean extract. Bernton concluded that occupational sensitization to castor bean was a definite condition.

Robbins (1923) described the case of a woman botany student who developed hay fever when she walked into the laboratory where castor beans were being dissected. She found that cutting the leaves and stem of the castor oil plant produced the same effect. One of her colleagues developed a badly inflamed eye due to rubbing it with his fingers after dissecting the beans.

Snell (1924) reported hypersensitivity in himself after years of handling dissected castor beans in his laboratory. He developed symptoms even when another person poured dry castor beans out of a bottle in the same room. The symptoms included irritation of the mucous membranes of the nose, throat and ears with violent and continued sneezing and coughing, swollen, puffy and reddened eyes and wheezing respiration.

Arnold (1924) described two cases where the ingestion of a single bean produced oedema of the mouth, pharynx and glottis followed in five minutes by generalized urticaria with giant wheals readily relieved by adrenaline.

Follweiller and Haley (1925) reported three cases where symptoms of hypersensitivity occurred in persons working with ricinus lipase in an agricultural laboratory.

Figley and Elrod (1928) described 85 cases of asthma occurring within a radius of one mile of a castor oil mill in persons who ascribed their symptoms to the dust emanating from the mill. Thirty-two of the cases were examined and two were eliminated as cases of seasonal asthma. Thirty cases of perennial asthma were thus studied who had never previously suffered from the condition. The onset of asthma was from one to 17 years after moving to the vicinity of the mill. The wind-borne dust from the mill contained castor bean particles. Positive skin reactions to pomace indicated that it was the specific source of the asthma in these persons. Control tests on normal persons gave negative reactions.

Ratner and Gruehl (1929), from their studies of the effects in experimental animals of pomace from the mill, concluded that the persons exposed to the castor bean dust had escaped ricin poisoning because the ricin, entering the body through various routes in sufficiently small amounts, promoted the development of immunity. They succeeded in sensitizing guinea-pigs after repeated inhalations of castor bean dust. When these animals were again exposed after a suitable incubation period they reacted with symptoms of anaphylaxis.

Bennett and Schwartz (1934) described two cases of sensitivity to the castor bean where the symptoms became manifest during the unloading of castor beans from a ship. The characteristic symptoms of sneezing, coryza, itching of the eyes, cough and wheezing respiration occurred, and also, in one case, urticaria of the face, neck and hands. Intracutaneous testing of these patients produced a marked positive (+ + +) reaction

with 1:1,000,000 and, in one case, with 1:100,000,000 dilution of the extract.

Zerbst (1944) investigating absenteeism and sickness in a fertilizer factory found the castor bean responsible for symptoms of conjunctivitis, congestion of the nose, soreness and dryness of the pharynx with swelling of the lips, bronchial irritation and severe asthma.

Bernton (1945) and Garver (1948) have also described cases of allergy to castor bean dust.

The following cases of sensitivity to castor bean have occurred in South Africa and are placed on record as they may provide a clue to the etiology of asthma and vasomotor rhinitis in some instances. There is no essential difference in this country and overseas between the circumstances of the occurrence of cases and the symptomology in patients.

#### CASE I

A 42-year-old, unmarried man was referred to me in August 1944, for investigation as to the cause of his asthma. The patient had been resident in the Transvaal for a year where he was employed in a factory manufacturing agricultural fertilizer. Before that he had been a general dealer in Bloemfontein, where he had always enjoyed good health.

Shortly after commencing work in the factory he began to develop 'colds' characterized by blocked nose, much sneezing and running nose. These symptoms cleared up within 20 minutes if he left the factory during the attack; otherwise they continued throughout the day but left him free from discomfort by the time he returned to work next morning.

After a few months he found increasing difficulty in breathing particularly in the early morning and in the late afternoon. He continued with his work at the factory but his condition steadily deteriorated and he was forced to seek medical advice in regard to attacks of asthma and bouts of paroxysmal coughing. Clinical and radiological examinations did not reveal anything abnormal.

About six months after commencing work at the factory he had occasion to visit a local oil-pressing mill to collect castor bean residue for the manufacture of the fertilizer. He very soon commenced sneezing and had a copious nasal discharge. His nose became blocked and his chest became tight and, by the time he returned to the factory he was suffering a severe attack of asthma which lasted about four hours.

At a subsequent visit to the mill a few days later he again began sneezing and developed another attack of asthma which lasted longer than the previous one. For more than half that night he was hardly able to breathe. Later, he ventured another visit to the mill but promptly left when the sneezing and wheezing commenced and he realized that an attack of asthma was imminent.

In spite of symptoms he attempted to continue his work in the factory but after the first two hours experienced the already well-known warnings of an attack, sneezing and a blocked nose. The following morning his nose was still blocked and at night he had an attack of asthma which was relieved with adrenaline.

He again visited the mill a week later but as the premonitory symptoms re-appeared he spent only a few minutes there and in this way escaped the expected attack. He has since avoided the mill and has been in perfectly good health.

The agricultural fertilizer manufactured at the factory consisted of bone, kraal manure, lime and the residues from castor beans after the oil had been expressed.

Because it seemed obvious that the patient's symptoms were associated with castor bean fertilizer at the factory and castor bean residue at the mill it was not thought necessary to carry out extensive allergic studies in this case.

Concentrated extracts prepared from the bone meal, hoof meal and kraal manure were used for skin testing purposes. Intracutaneous tests with these, however, proved negative.

The patient was submitted to skin tests with a series of dilutions of extracts of castor bean residue. The tests were

cautiously carried out using very high preliminary dilutions. The results of these tests were as follows:

Dilution	Scratch Test	Intracutaneous Test
1:100,000,000	Nil	Nil
1:10,000,000	Nil	slight (+)
1:1,000,000	Nil	moderate (++)
1:100,000	Trace (+)	marked (+++)
1:10,000	Slight (+)	not tested

The patient reacted definitely to a 1:1,000,000 concentration of the castor bean extract by the intracutaneous method. In view of the very severe local and general reactions that may occur in sensitive subjects skin tests with dilutions of the extract lower than those shown above were not attempted.

The patient found it possible to leave the factory and there has been no recurrence of the asthma since.

#### CASE 2

In May 1948, a married man, 40 years of age, a commercial traveller, was referred to me to confirm a suspicion that he was sensitive to castor oil beans. The patient had lived in Johannesburg for the past 7 years.

There was no family history of allergy but in the last two or three years the patient himself had received treatment for sinus trouble. His 9-year-old son had never manifested signs of any form of hypersensitivity.

The patient had returned the previous week from a business visit to South America. He had an uneventful voyage except that on one occasion, for no obvious reason, he suddenly experienced violent paroxysms of coughing not associated with sneezing or watering of the eyes.

The patient brought with him a variety of samples of merchandise including castor oil cake. Within five minutes of opening the parcel of samples and for a period of half an hour he was distressed by continuous coughing and sneezing followed by tightening of his chest and difficulty in breathing.

Subsequently whenever the patient entered the room of his house where the samples were stored he commenced to sneeze. Irritation of the eyes developed for which 'drops' were prescribed.

The castor bean samples were then removed but the coughing and sneezing bouts continued to bother him when he entered that particular room, probably due to some castor bean dust which the patient admitted had been inadvertently spilled over the other samples during removal.

The patient was advised to have the room thoroughly cleaned, to have a new wrapping placed over the samples and to return in a week for skin tests. By that time the sneezing had stopped but here was still some difficulty in breathing by day and coughing by night.

As castor bean sensitivity was obviously the cause of his trouble, the following confirmatory tests with graded doses of extract of castor bean were done.

Dilution	Scratch Tests	Intracutaneous Tests
1:100,000,000	Trace	
1:10,000,000	Trace	
1:1,000,000	Trace	(Not Done)
1:100,000	Trace	
1:10,000	Trace	
1:1,000	Trace	
1:100	Slight (+)	
1:10	Marked (+++)	

Intracutaneous tests were not carried out in this case. The patient, who showed a definite slight reaction by the scratch test to 1:100 dilution of the castor bean extract was not as skin sensitive as the previous patient (Case 1), whose corresponding reaction occurred with 1:10,000 dilution of the extract.

The patient's condition rapidly improved and, as avoidance of the castor bean was an easy matter, no further consideration was given to therapeutic measures.

#### CASE 3

A woman lecturer in botany referred her condition to me in August 1944. While working in a shell-filling factory during 1912-1916 she was very susceptible to certain of the materials used in the manufacture of high explosives. For instance, after a few minutes in the picric acid department, her mucous membranes were so disturbed that she could not continue her work there. Another of the chemical substances produced eczema of the face. She was not aware of any other sensitivities. Her mother was hypersensitive to fish and her mother's sister and child both suffered from eczema.

In 1917, the patient began lecturing in Botany and soon after the commencement of the laboratory session and for a couple of months thereafter she developed a blocked nose which was sufficiently uncomfortable to force her to seek medical aid. The use of a nasal spray improved her condition. Early the following year there was a recurrence of the symptoms which, however, were no longer relieved by the nasal spray. She then began to get attacks of asthma which continued for a month or two only and then cleared up. The attacks which only came on in the laboratory were heralded by swellings around the mouth and eyes.

The cause of the asthma was discovered by accident in the following manner. The patient was carrying out breeding experiments in plants which included the castor oil plant. Wanting to remove the seed from the fruit on one plant she cracked the fruit-wall open with her teeth and also broke open the seed-coat exposing the endosperm. In a few minutes the familiar swellings around the mouth and eyes appeared. She knew at once that she had found the culprit, as castor oil seeds were used as class material in the early part of each year. Since the banishment of castor oil seeds from the laboratory no further attacks have occurred.

It is interesting to observe that, as a student herself, she had handled castor beans without ill effects.

Later, at a scientific meeting she sniffed a witch doctor's remedy forgetting that it might contain castor bean dust as an ingredient. She had to retire ignominiously from the meeting.

#### CASE 4

A man, 27 years old, an analytical chemist, appeared with a complaint of severe vasomotor rhinitis. The condition commenced some four months previously from the first day that he took up the position of analytical chemist in a factory where oils for domestic use were expressed from sunflower seeds, ground nuts and castor beans. There was a considerable amount of seed dust in the atmosphere in the vicinity of the factory.

The patient knew from experience that neither ground nut nor sunflower seeds affected him.

As soon as he walked into his laboratory in the morning his nose began to run and continued thus intermittently for the rest of the day. There was considerable sneezing but no irritation of the eyes or chest symptoms. His sleep was much disturbed at night by his nose condition. He was much better on Sundays when not at work and was completely free from symptoms on the second day of long week-ends.

There is little doubt that the cause of the condition was the inhalation of castor bean dust but unfortunately, confirmatory skin tests could not be carried out in this case.

#### CASE 5

A man of 50 years arrived in Johannesburg from Europe and was referred to me a few weeks later for asthma, suspected to be due to the inhalation of castor bean dust.

His business was seed-growing in which he had been engaged for some 30 years. Sixteen years ago he had introduced castor beans which he handled both in the fields and in the warehouse without ill effect. Six years later, however, he experienced mild irritation of the mucous membranes of the nose and throat when handling the seeds, which, however, easily passed off. Two years later the first of his asthmatic attacks occurred. These were confirmed as being due to castor bean dust. Indeed, while still in Europe he had received injections of extracts made from different parts of the castor bean plant



but without benefit. His sensitivity was so great that on one occasion he developed asthma when he got into his motor-car which had been standing in the grounds of a castor oil mill where ground beans were stored. When he resumed his journey in another car the attack ceased.

He remained free from asthma after he had arranged that castor beans in his factory were to be handled only in air-tight bins. Convinced after some period that he had lost his sensitivity he permitted contact with the dust and had an attack of asthma. Two weeks after his arrival in Johannesburg he visited a local castor bean factory and after a short while developed asthma.

Experience had taught him that the slightest quantity of castor bean dust attached to the hair or clothing of persons with whom it came into contact was sufficient to affect him. Within half an hour sneezing began and the symptoms culminated in an attack of asthma which lasted at least for 48 hours. An offer of confirmatory skin tests with an attempt at therapeutic desensitization was not acceptable to the patient who planned to avoid further contact with castor beans.

#### CASE 6

A male medical student, 24 years of age, had for many years suffered from recurrent 'colds'. In 1943 he was sent 'up North' with the army where he was quite well except for a slight running nose.

After three years he returned to South Africa in January and during the next month or two his old complaint of excessive sneezing, running of the nose and watering of the eyes recurred. He commenced the first year of his medical studies which included botany. Work was proceeding on castor oil seeds and within ten minutes of his walking into the laboratory and before he himself had handled the beans, which were some four to five feet away from him at the time, he suddenly developed itching and tingling of the nose with much sneezing and profuse rhinorrhoea. The symptoms wore off when he left the laboratory but promptly recurred when he returned to the same laboratory a week later. He sneezed all the way home, but there were no chest symptoms nor watering of the eyes.

Confirmatory skin tests could not be carried out and this case can only be regarded as one suggestive of castor bean sensitivity.

#### DISCUSSION

Castor bean is a very powerful allergen and in sensitive persons may give rise to severe symptoms on the inhalation of even minute quantities of the dust. The greatest care should be observed in skin testing with castor bean extract because of the serious local and general reactions that may result. Very high dilutions of the extract should be used for the initial tests which preferably should be carried out by the 'scratch' method.

The question of desensitization with castor bean extract always arises in the case of persons who have become sensitized to this allergen and who are of necessity compelled to handle or come into contact with castor bean in the course of their duties or their occupation. No records have been found relating to the successful desensitization of a sensitive subject. It may be that by very careful injections of a graduated series of doses of extracts of high dilutions, satisfactory results may be obtained. But this extract is so potentially harmful to a sensitive person that the matter of desensitization should be weighed seriously before the procedure is undertaken. If it is at all possible for the patient to avoid contact with the bean he should be advised to do so. In the series of South African cases described above this was possible and the need for desensitization did not arise.

It is not known what proportion of persons handling castor bean are likely to develop a sensitivity thereto but the occupational hazard is there and should be borne in mind in the investigation of respiratory or other allergies in persons exposed to the dust. Such persons include workers in mills where the oil is expressed from castor seeds; workers in factories where fertilizers are manufactured; merchants, farmers and others who are likely to handle castor oil cake or agricultural fertilizers; laboratory workers who dissect the castor bean for botanical studies or whose business it is to handle the bean or the pomace for purposes of chemical analysis. In addition, the hazard to persons living in the vicinity of factories where agricultural fertilizers are manufactured should be borne in mind. From the public health point of view dust or fumes from such factories or oil mills should be suitably disposed of.

#### SUMMARY

South African cases of hypersensitivity to the inhalation of castor bean dust are described. They are similar to cases already reported overseas in that they are characterized clinically mainly by coryza and bronchial asthma.

Castor bean sensitivity may be associated with workers in castor oil mills and fertilizer factories or in persons living in the vicinity. In addition, farmers, merchants and others handling the castor bean cake may develop sensitivity thereto as well as laboratory workers handling the bean for botanical studies or for chemical analysis.

The dangerous nature of castor bean as an allergen is emphasized and a warning is given with regard to the use of the extract when skin-testing persons suspected of being sensitive to the bean.

The question of desensitizing castor bean sensitive patients is discussed and it is suggested that whenever possible the patient should be advised to avoid contact with the castor bean rather than be subjected to the risk of severe reactions associated with the injection of so potent an allergen.

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South African Medical Journal  
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EDITORIAL

THE PROBLEM OF AMOEBIC DYSENTERY

In a letter published elsewhere in this issue, Dr. Elsdon-Dew, Honorary Director of the Amoebiasis Research Unit established in Durban by the Council for Scientific and Industrial Research, describes his impressions of a visit to Lourenco Marques, a town similar geographically and climatically to Durban.

It is remarkable that Lourenco Marques, which is more tropical and less modern than Durban, should have, by comparison with Durban, no amoebic dysentery. Durban has become well known for this disease. Several interesting explanations suggest themselves. First there is the question of hygiene, for fundamentally the disease arises from coprophagy. Are the conditions around Lourenco Marques so much better than those around Durban, that a parasite of this type cannot easily bridge the gap between the bowel of one person and the mouth of another? Like Durban, Lourenco Marques is attracting natives to work in its industries, and they too, have to provide their own accommodation within reach of their work. They build their own homes, but organized sanitation and water supply are missing in both towns. The Portuguese have more space—and are fortunate that the sandy soil is less conducive to the survival of the cysts than is the comparatively impervious soil in the 'Cato Manor' area. Sanitation must play some, if not the major part.

Dr. Elsdon-Dew points out that the Portuguese natives have a more balanced diet. As fish-eaters they can draw on the ocean for their supply of protein—a dietary factor all too inadequate in the rations of our peri-urban natives. Proteins are protective against many diseases and this may well also apply to amoebiasis; for there is undoubtedly some such factor concerned with the difference between the carrier and the disease state.

Another interesting possibility is the existence in Durban of a new and more virulent form of the parasite. This hypothesis does not explain why the disease in its acute and dangerous form is practically confined to the Bantu and their neighbours, both Indian and European, are by comparison immune from the fulminant variety of the disease, in which form it certainly seems to be spreading from Durban as a centre. It would be strange, however, that a new strain of parasite should confine its attentions to the indigenous population. It is apparent that South Africa, and particularly Durban, has a problem worthy of the closest attention, and the Council for Scientific and Industrial Research is to be congratulated on its initiative in setting up an Amoebiasis Research Unit in Durban.

VAN DIE REDAKSIE

DIE VRAAGSTUK VAN AMEBE-DISENTERIE

In 'n brief wat elders in hierdie uitgawe verskyn, beskryf dr. Elsdon-Dew, Ere-direkteur van die Navorsingseenheid vir Amebiase wat in Durban deur die Raad vir Wetenskaplike en Nywerheidsnavorsing gestig is, sy indrukke van 'n besoek aan Lourenco Marques, 'n stad wat ten opsigte van geografie en klimaat met Durban ooreenkom.

Dit is merkwaardig dat Lourenco Marques wat meer tropies en minder modern as Durban is, in vergelyking met Durban geen amebe-disenterie het nie. Durban het bekend geword vir hierdie siekte.

Verskeie interessante verklaarings doen hulself voor. Eerstens is daar die kwessie van higiëne, want die siekte spruit in die eerste plek uit koprofagie voort. Is die toestande in die omgewing van Lourenco Marques soveel beter as dié rondom Durban dat 'n parasiet van hierdie soort nie maklik die gaping tussen die ingewande van die een persoon en die mond van 'n ander kan oorbrug nie? Soos Durban, trek Lourenco Marques naturelle om in sy nywerhede te werk en ook hulle moet hul eie huisvesting binne bereik van hul werk verskaf. Hulle bou hul eie huise, maar georganiseerde sanitasie en waterverskaffing ontbreek by albei stede. Die Portugese het meer ruimte en is gelukkig in dié opsig dat die sanderige grond nie so meewerk tot die behoud van die siste soos die betreklik ondeurdringbare grond van die 'Cato Manor'-gebied nie. Sanitasie moet 'n rol speel wat selfs die belangrikste rol mag wees.

Dr. Elsdon-Dew wys daarop dat die Portugese naturelle se dieet meer gebalanseerd is. As viseters kan hulle op die see vir hul proteïenvoorraad staat maak—'n voedingstof wat glad te min in die voedsel van ons omstedelike naturelle voorkom. Proteïene bied beskerming teen baie siektes en mag dit ook in die geval van amebiase doen; want daar is ongetwyfeld 'n faktor van dié aard betrokke by die verskil tussen die draer en die siektetoestand.

'n Ander interessante moontlikheid is dat daar in Durban 'n nuwe kwaadaardiger vorm van die parasiet bestaan. Hierdie veronderstelling verklaar nie waarom die siekte in sy akute en gevaarlike vorm feitlik tot die Bantoe beperk is en waarom hulle bure, beide Indiërs en blankes, in vergelyking immuun is teen die skielike, heftige vorm van die siekte nie, wat sekerlik van Durban as sentrum skyn te versprei. Dit sal egter vreemd wees dat 'n nuwe vorm van die parasiet hom tot die inheemse bevolking sal beperk. Dit is duidelik dat Suid-Afrika, en veral Durban, 'n vraagstuk het wat noukeurig dopgehou moet word en die Raad vir Wetenskaplike en Nywerheidsnavorsing moet geluk gewens word met sy ondernemingsgees by die stigting van 'n Navorsingseenheid vir Amebiase in Durban.

### THE BRITISH MEDICAL JOURNAL: FIFTY YEARS OF MEDICINE

The first issue of the *British Medical Journal* published in 1950 is, indeed, a memorable one. It comprises a review of medicine, in all its multifarious aspects, in the first half of this century. As the reader will see from the list of contributors and their contributions,\* the content of this remarkable number is not only substantial but also distinguished.

Medical practitioners the world over will be interested in the 12-page pictorial supplement, which is a fascinating record of the land-marks in medical achievement since 1900. Many facsimile reproductions of the first publications dealing with thyroxin, adrenalin, suprarenal cortex compounds, the sex hormones, the vitamins, the treatment of pernicious anaemia, the contributions on plague, yellow fever and trypanosomiasis and the antibiotics make an interesting and exciting record of trial and success.

We would like to congratulate the Editor on this very accomplished achievement and we feel sure that the issue of the *British Medical Journal* published on 7 January 1950 will be regarded by all our colleagues as a memorable record of a remarkable period of medical and scientific achievement.

\* Contents: Inhoud:—*Advances in Medicinal Therapeutics* (Sir Henry H. Dale); *Surgery 1900-1950* (Dr. Geoffrey Jefferson); *Fifty Years of Midwifery* (Dr. R. W. Johnson); *Fifty Years of Medical Research and Practice* (Sir Henry Cohen); *Fifty Years of Clinical Pathology* (Sir Lionel Whitby); *Prevention and Control of Infection* (Dr. Robert Cruickshank); *Development of Psychological Medicine* (Dr. John Rickman); *Fifty Years of Tropical Medicine* (Dr. J. S. K. Boyd); *Fifty Years of Radiology* (Dr. S. Cochrane Shanks); *Fifty Years of Public Health Legislation* (Sir Arthur MacNalty); *Fifty Years of Progress as Shown by Vital Statistics* (Dr. Percy Stocks); *Medical Progress from 1850-1900* (Dr. Charles Singer).  
Leading Articles: Inleidingsartikels:—*Fifty Years of Medicine; Progress*

### DIE BRITISH MEDICAL JOURNAL: VYFTIG JAAR GENEESKUNDE

Die eerste nommer van die *British Medical Journal* wat in 1950 gepubliseer is, is inderdaad 'n gedenkwaardige. Dit bestaan uit 'n oorsig van al die veelvuldige vertakkinge van geneeskunde tydens die eerste helfte van hierdie eeu. Soos die lesers uit die lys van medewerkers en hulle bydraes\* sal merk, is die inhoud van hierdie merkwaardige nommer nie net belangrik nie, maar ook vernaaam.

Geneeskundiges oor die hele wêreld sal die prentevyvoegsel van 12 bladsye interessant vind. Dit is 'n boeiende weergawe van die mylpale in geneeskundige prestasie sedert 1900. Baie faksimile-afdrucke van die eerste nommers in verband met tiroksien, adrenalien, afskeidingstowwe van die bynier-korteks, die geslags-hormone, die vitamien, die behandeling van kwaadaardige bloedarmoede, die bydraes oor pes, geelkoors en trypanosomiasis en die lewewernietigende middels is 'n interessante en spannende weergawe van moeite en sukses.

Ons wil graag die Redakteur met hierdie uiters voortrefflike prestasie gelukwens en ons is seker dat die uitgawe van die *British Medical Journal* wat op 7 Januarie 1950 gepubliseer is, deur al ons kollegas as 'n gedenkwaardige weergawe van 'n merkwaardige tydperk in mediese en wetenskaplike prestasie beskou sal word.

in Pathology; The Relief of Pain; Progress in Public Health; Progress in Psychiatry; Medical Genetics; Statistics in Medicine; Fifty Years of Ophthalmology; Otolaryngology; Anaesthetics and Anaesthetists.

General Articles: Algemene Artikels:—*Medicine To-day and Yesterday* (Sir Robert Hutchinson); *Surgery in 1900* (Dr. G. Grey Turner); *The Changing Face of Medicine* (Sir Robert Young); *General Practice Fifty Years Ago* (Dr. Alfred Cox); *Transport and Communications* (W. J. Bishop); *Pictorial Supplement: Acknowledgments*.

Supplement: Byvoegsel:—*Fifty Years of the British Medical Association; Penny-a-week Doctors; British Medical Association and British Medical Journal*.

## PRIMARY SYSTEMIC AMYLOIDOSIS

### WITH GROSS CARDIAC INVOLVEMENT

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Secondary amyloidosis was a not uncommon complication of chronic caseous tuberculosis, long-standing suppuration in bones, chronic empyema and florid tertiary syphilis. In these conditions amyloid, a foreign protein, is produced and deposited in the connective tissue of the liver, spleen and kidney and less commonly in the adrenals, pancreas and intestinal mucosa.<sup>1</sup> Since the introduction of modern medical and surgical treatment, secondary amyloidosis has become a rare condition.

Primary amyloidosis is even less common. Lubarsch was the first to distinguish between secondary and

primary amyloidosis and his criteria for the diagnosis of the latter, as quoted by Perla and Gross<sup>2</sup>, are:—

1. No demonstrable concomitant primary pathology such as is found in secondary amyloidosis;
2. Almost complete absence of amyloid in those organs most involved in secondary amyloidosis (liver and spleen);
3. Organs such as heart, lungs, skin and striated muscle, not affected in secondary amyloidosis, are particularly involved;
4. The amyloid may occur in the form of discrete nodules;

5. Frequently the deposits fail to react to the well-known tests for amyloid (staining with iodine, congo red, and methyl, crystal or gentian violet).<sup>3</sup>

A simple classification of amyloidosis has been introduced by Reimann, Koucky and Eklund:

1. Primary amyloidosis.
  2. Secondary amyloidosis.
  3. Focal amyloidosis characterized by small solitary or multiple foci in the eye, bladder, urethra, pharynx, tongue and especially in the respiratory tract. It is usually of the primary type but is distinct enough to be grouped separately.
  4. Amyloidosis associated with multiple myeloma. This is secondary in nature, but the distribution and character of the deposits frequently resembles those of the primary type except that huge deposits may occur in the joints and elsewhere. The spleen and liver are seldom affected. Small deposits are occasionally found in the blood vessels of the heart, spleen and elsewhere.<sup>4</sup>
- Fifty-three cases of primary systemic amyloidosis have been reported<sup>2, 5</sup> and to these may be added the following case which has gross cardiac involvement.

#### CASE REPORT

A European female aged 71 years was admitted to Groote Schuur Hospital on 30 April 1949, so ill that she was unable to give a history, which was obtained from her daughter. Over 30 years ago she had had several operations for the removal of tumours, probably ovarian. Since these operations she had had vague attacks of upper abdominal pain. For the previous four months she had been dyspnoeic on exertion and orthopnoeic, and there had been progressive swelling first of her feet and then of her abdomen. For the same period she had lost weight, become weaker and had had anorexia.

**Examination.** The patient was sitting in the orthopnoeic position and very dyspnoeic. There was slight cyanosis. Her legs and abdominal wall were oedematous and there was distension of the abdomen. The neck veins were distended and pulsated during inspiration. Temperature, 98° F. The pulse was 132 beats per minute regular and weak. The blood pressure was 105/75 mm. Hg. The apex beat was palpable in the fifth left interspace 4½ inches from the midline. There was cardiac dullness 1½ inches to the right of the sternum. The heart sounds were all closed and there was a gallop rhythm heard at the apex. Respirations were rapid (34 per minute), deep, regular and sighing. There was dullness to percussion and also fine crepitations at both lung bases up to the sixth rib posteriorly. The tongue was clean and rather smooth. There was slight dullness in the flanks. The liver was enlarged downwards to four fingers' breadth and slightly tender. There was no abnormality in the central nervous system.

**Urine.** Specific gravity 1.020. Albumin, +. Sugar, absent. Ketones, a trace. Microscopy of spun deposit showed a few pus cells.

**Blood Count.** Red cells 5.71 million per c.mm. Haemoglobin, 16%. White cells 17,240 per c.mm. with polymorphonuclear leucocytes 74%, lymphocytes 24%, monocytes 2%, eosinophils and basophils 0%.

E.S.R. 37 mm. in one hour (Westergren). Venous pressure, 26 cm. of water.

**Special Investigations and Course.** An X-ray of the chest was reported by Dr. E. van den Burgh: 'There is enlargement of the heart and congestion of the lung fields. ?Bilateral pleural effusion. No abnormal mediastinal mass can be detected on this film.'

She was given intensive treatment for her cardiac failure. A venesection (150 c.c. of blood) was performed and mersalyl glucophyllin and digoxin were given intravenously but these failed to cause a diuresis. Two days after admission the blood urea was 127 mg. per 100 c.c. Another venesection (600 c.c. of blood) caused some improvement in the patient's condition, but early the next morning she began to sweat, became cold and died. She had been apyrexial throughout her stay of 2½ days in hospital.

Clinically the striking feature of the case was that the cardiac failure showed almost no response to treatment.

#### AUTOPSY FINDINGS (14 HOURS AFTER DEATH)

The body was that of an elderly well nourished European female. The neck veins were distended and the face cyanosed. There was pitting oedema of both legs and the sacral area. The abdomen was very distended and there was an old median subumbilical scar. **Respiratory System:** The trachea contained considerable frothy mucus but was otherwise normal. The right pleural cavity contained about 500 c.c. of slightly blood-stained fluid. There were no adhesions in the pleural cavities. The right lung had only two lobes. The cut surface revealed a small red infarct in the right upper lobe and another in the lower lobe. No thrombi or emboli could be detected in the pulmonary arteries. The left lung had been displaced posteriorly by a large pericardial effusion and showed slight emphysema and considerable oedema. The right lung weighed 755 grammes and the left 485 grammes.

**Cardio-vascular System.** The neck veins were distended and contained dark blood which was still fluid. The pericardial sac contained about 500 c.c. of clear yellowish fluid. The heart (Figs. 1 and 2) was markedly enlarged, weighing 655 grammes, and the exceedingly prominent left auricle was very striking. Not only was the auricle dilated, measuring 8 cm. in its vertical diameter, but the wall was fairly uniformly thickened to 0.8 cm. The endocardium was smooth, with irregular pale areas but no nodules were present. The left ventricular wall measured 1.5 cm. midway between apex and base. One was struck by the brown translucent appearance of the myocardium. The right ventricle was slightly dilated and hypertrophied, being about 1 cm. thick just below the pulmonary ring. The right auricle was slightly dilated, but the wall was of normal thickness. This formed a striking contrast with the grossly pathological left auricle. The tricuspid, mitral, aortic and pulmonary valves all appeared normal. The coronary vessels were not narrowed and no ante-mortem thrombi were found. The pulmonary ring was slightly dilated, being 8 cm. in circumference. The wall of the pulmonary artery was slightly thickened. By comparison the aortic ring was only 6 cm. in circumference. The aorta was slightly thickened. There was slight atheroma of the ascending portion, this was fairly well marked in the descending aorta and there was calcification in the common iliac arteries.

**Digestive System.** The tongue was macroscopically normal, and in particular there was no obvious increase in size. The oesophagus showed gross post-mortem change. There was no free fluid in the peritoneal cavity and the abdominal distension was due to the gas filled stomach. On the lesser curvature, about 6 cm. from the pylorus, was a shallow sub-acute ulcer about 1 cm. long by 0.3 cm. broad with some adherent blood clot in its floor. The walls of the stomach and duodenum, small and large intestines were thickened but this was attributed to oedema and nothing was taken for



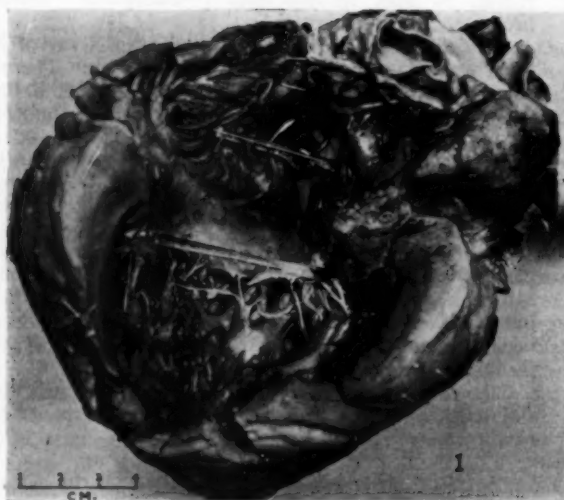


Fig. 1. Right side of heart showing dilated right auricle and hypertrophied right ventricle.

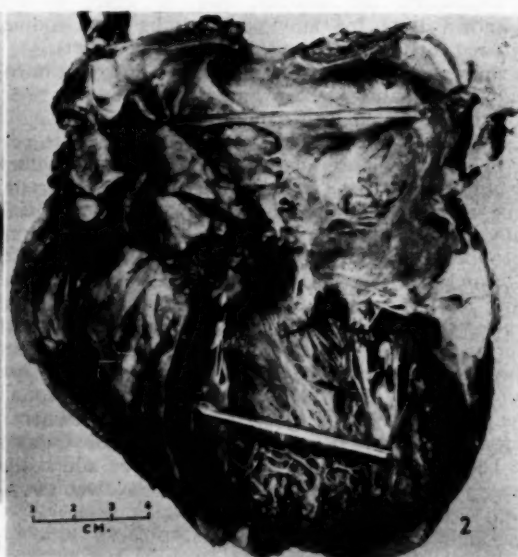


Fig. 2. Left side of heart showing enlarged, thickened, smooth left auricle.

section. The appendix was absent and there was a number of adhesions in this region and between the greater omentum and the anterior abdominal wall.

The liver was enlarged (1,595 grammes) and typically nutmeg in appearance. The gall bladder was normal and contained dark bile. The cystic and common bile ducts were patent. The spleen (170 grammes) showed some lymphoid hyperplasia. The pancreas was normal.

**Genito-Urinary System.** There was a considerable amount of oedematous perinephric fat. There was a striking difference in size between the two kidneys, the right weighing 110 grammes and the left 180 grammes. The capsules stripped fairly easily leaving slightly granular surfaces. In each kidney was a small pale infarct about 3 mm. in diameter. The cut surface showed no abnormality. The ureters and bladder were normal.

The vagina was normal. The uterus was considerably less atrophied than one would expect for a woman of 71 years and the wall was about 2 cm. thick. The endometrium was congested. The adnexa had been removed except for 1 cm. of the left fallopian tube.

**Skull and its Contents.** The skull and meninges were normal. The brain was slightly oedematous and in the left parietal cortex near the antero-lateral surface there was a small cyst (1 cm. in diameter) containing a little altered blood.

**Endocrine Glands.** The suprarenal glands and the pituitary appeared normal.

**Histology.** Sections stained with haematoxylin and eosin suggested the probability of amyloidosis and this was confirmed by the use of crystal violet and congo red. The congo red stained the amyloid very poorly whilst the crystal violet usually demonstrated the amyloid well, but even in the same section the staining was variable.

**The distribution of the amyloid in the heart.** In the left auricle, immediately beneath the endocardium, was a thick layer of fibrillar material containing patchy areas of amyloid. Then followed a thinner layer of cardiac muscle with oedema of the connective tissue and small patches of amyloid infiltration. Beyond this was a layer, of equal thickness, of muscle where many of the individual cells were ringed round with amyloid, and in other areas there were confluent masses of amyloid. In the outermost layer of subpericardial con-

nective tissue many of the fat cells were ringed with amyloid. Thus the thickness of the auricular wall was to a large extent due to amyloid deposition.

The left ventricle, was not so striking macroscopically. In the subendocardial muscle there were foci of degenerate muscle surrounded by amyloid. These foci became more frequent and larger in the outer layers and just under the subpericardial connective tissue were actually confluent. In the subpericardial connective tissue were large masses of amyloid and most of the fat cells had amyloid deposited in their cell membranes.

The right ventricle showed some of the muscle, especially towards the pericardial surface, to be replaced by amyloid.

Only the pulmonary valve was examined histologically and this contained a very small amount of amyloid.

A prominent feature of the organs examined was the deposition of amyloid in the media of the smaller arteries and arterioles. The wall of the vessel was markedly thickened and the lumen narrowed and distorted. This was a feature of the smaller arteries of the myocardium, lungs, stomach and lesser omentum, uterus and liver. Notable and significant exceptions were the arterioles of the spleen and kidney, which were but little affected. The aorta and the pulmonary artery showed very small, linear deposits of amyloid between the muscle and elastic fibres of the media. The veins were either not at all or only slightly affected.

Amyloid was also deposited in unstriated muscle, and the outer longitudinal layer of the stomach was almost completely replaced, the inner circular layer being relatively spared. The uterine muscle was replaced in many areas by amyloid.

Many of the alveolar walls of the lungs were irregularly thickened due to amyloid, which compressed and narrowed the capillaries.

A striking feature of the sections of omentum and subpericardial connective tissue was the deposition of rings of amyloid round the fat cells.

No amyloid was seen in the main sites of deposition of secondary amyloidosis, viz., the parenchyma of the spleen, liver and kidneys.

Incidental histological features were pulmonary infarcts, a subacute ulcer of the stomach penetrating the muscularis mucosa, congestion of the spleen and liver with many areas of centrilobular degeneration in the latter, small infarcts in the kidneys, and senile degeneration of the endometrium of the uterus.

*Anatomical Diagnosis.* i. Primary systemic amyloidosis affecting the heart, arteries and arterioles, alveoli of the lungs, muscle of the stomach and uterus.

ii. Signs of congestive cardiac failure (dependent oedema, nut-meg liver, passive congestion of organs, pleural effusion). Infarcts in the lung and kidneys. Subacute gastric ulcer. Peritoneal adhesions.

#### DISCUSSION

This case completely fulfils the criteria necessary for the diagnosis of primary amyloidosis. There is no concomitant primary pathological condition; there is almost complete absence of amyloid in liver, spleen and kidneys; the heart is particularly involved, and the deposits react irregularly to the tests for amyloid. The histology closely resembles that described in many previous cases.<sup>2, 5, 8</sup>

The blood-stained pleural effusion was probably the result of the pulmonary infarcts together with the congestive cardiac failure. The infarcts were presumably caused by small emboli from the deep leg veins although these emboli were not demonstrated.

The long-standing abdominal discomfort may be correlated with the peritoneal adhesions, and possibly more recently with her gastric ulcer.

The age incidence of primary amyloidosis varies but the vast majority of cases occur between 40 and 70 years, the average age of the cases recorded by Lindsay and Knorp<sup>6</sup> and Koletsky and Stecher<sup>7</sup> (40 cases) being 54 years. The oldest case recorded is by Strauss (1933) in a male of 72 years. The second oldest is the present case and the third oldest is by Beneke and Bonning (1908) in a male of 70 years.<sup>6, 7</sup>

Extensive involvement of the cardiovascular system is common. Forty-six of the 51 autopsies have shown some degree of amyloid infiltration of the heart. In 27 cases there has been clinical evidence of heart failure, and in 23 heart failure has been indicated as the cause of death.<sup>2, 5, 8</sup>

In an excellent review of the heart in primary amyloidosis, Lindsay states that the cardiac failure may be caused by one or more of the following mechanisms:

1. Deposition of amyloid in the pulmonary vessels and alveolar walls with resulting chronic cor pulmonale;
2. Deposit in the cardiac blood vessels (veins and capillaries as well as arteries) leading to coronary insufficiency.
3. Diffuse or localized nodular interstitial amyloid infiltration with or without secondary degeneration of the myocardial fibres;
4. Pericardial or endocardial deposits;
5. Extensive valvular deposits producing stenosis or insufficiency.<sup>8</sup>

In the present case the chief causes of the cardiac failure appear to have been the deposition of the amyloid in the myocardium resulting in inefficient cardiac contraction and deposition of amyloid in the small myocardial arteries causing chronic coronary insufficiency. There was probably some degree of chronic cor pulmonale.

Clinically these cases often present as an intractable cardiac failure of unknown etiology. These usually have enlarged hearts, with no evidence of valvular

disease, hypertension or coronary arteriosclerosis. Eisen, quoted by Ballinger,<sup>5</sup> states that there is a definite clinical pattern characterized by a high incidence of congestive heart failure (54%), less often macroglossia (42%) and weight loss (31%). Lindsay describes in detail the numerous symptoms and signs that occur in these cases.<sup>8</sup> The electrocardiographic changes are frequently interpreted as showing myocardial damage in the form of altered T-waves, prolonged P-R intervals and low voltage. The most important clinical feature is the rapid downhill course in spite of intensive therapy.<sup>5</sup> This latter point was well demonstrated in the present case, even though the duration of her stay in hospital was very short.

Ante-mortem diagnosis is rare. Of the 46 cases discussed by Ballinger, in only eight was the correct ante-mortem diagnosis made.<sup>5</sup> Weiss<sup>9</sup> includes primary amyloidosis in his group of less common conditions of the heart and aorta which deserve more frequent recognition. Once the condition has been suspected, the intravenous congo red test may be useful, and the diagnosis may be confirmed by biopsy of skin, skeletal muscle or tongue. Variability of staining reaction is one of the characteristics of primary amyloid and thus the biopsy material should be stained by both congo red and crystal violet.<sup>8</sup>

The duration of life is very variable and prognosis may be difficult. Cases have lived for four months to 16 years after the onset of symptoms.<sup>8</sup>

Treatment up to the present has been symptomatic. Secondary amyloidosis has been treated successfully, although the underlying process has continued, with the oral administration of desiccated powdered whole liver. Of 13 children with amyloidosis secondary to chronic suppurative disease, four died of advanced tuberculosis and the rest showed marked improvement or complete recovery. Early signs of recovery were diminution of the size of the liver and spleen, with other signs and symptoms regressing more slowly. In 16 patients with amyloidosis secondary to tuberculosis, nine were cured as demonstrated by disappearance of symptoms and absence of congo red retention. This treatment may be useful in cases of primary amyloidosis.<sup>8</sup>

Primary systemic amyloidosis probably occurs more frequently than the number of recorded cases indicates. This condition should be considered in cases of cardiac failure resistant to treatment, especially in the older age groups and where there is no obvious etiology. Attempts should be made to investigate these cases along the lines indicated. In this way more information will be gained concerning the, as yet, unexplained underlying process of amyloid deposition, and the possibility of successful treatment with oral desiccated liver can be investigated.

#### SUMMARY

Primary amyloidosis differs from secondary amyloidosis mainly in that there is no primary pathology to account for the condition, and the amyloid is deposited in the heart, lungs, skin and striated muscle rather than in liver, spleen and kidney.

A case is presented of primary systemic amyloidosis characterized clinically by congestive cardiac failure

of unknown etiology not responding to intensive therapy. At autopsy, the heart was grossly enlarged due to amyloid deposition in the myocardium. Amyloid was also found in the small arteries and arterioles, alveolar walls of the lung, muscle of the gastric wall and uterus, and round the fat cells in the omentum and subpericardial connective tissues.

Primary amyloidosis should be considered more frequently in cardiac failure of unknown etiology in the older age groups especially where there is no response to adequate treatment.

I should like to thank Dr. L. Mirvish for permission to publish this case, Dr. J. Hickley for the case notes, and Prof. J. G. Thomson and Dr. G. Selzer for their interest and helpful criticism. The photographs were the work of Mr. G. MacManus.

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#### NEW PREPARATIONS AND APPLIANCES

##### DICONONE (DIHYDROCODEINONE) (H. F. D.)

Diconone, manufactured by Knoll Ltd., London, W.1, and distributed in Southern Africa by Scherag (Pty.) Ltd., P.O. Box 7539, Johannesburg, is again available.

**Properties:** A selective antitussive with a cough-depressant action more prompt and more prolonged than that of codeine. Well tolerated and non-constipating.

**Indications:** For all forms of irritant cough, pulmonary and laryngeal tuberculosis, bronchitis, bronchiectasis, whooping cough, etc.

**Dosage:** 1 tablet of gr. 1/13 twice or thrice daily. In more severe cases the dose may be doubled. Children are given  $\frac{1}{4}$  tablet *pro dosi*.

Diconone should not be taken on an empty stomach.

**Packings:** Tubes of 10 tablets each of gr. 1/13.

##### THE SURQUALET ELECTRIC STERILIZER

##### ELIMINATING CONTAMINATION OF STERILIZED SYRINGES

Contamination of syringes and needles during assembly after sterilization due to contact with fingers or other non-sterile surfaces is a danger of which medical practitioners are well aware. This risk is removed by the use of the Surqualet Electric Sterilizer, designed and manufactured by Surgical Equipment Supplies Ltd., Westfields Road, London, W.3.\*

The Surqualet makes it possible for a syringe to be selected and assembled after sterilization without the hand touching any part except the barrel and without the use of forceps.

This is accomplished quite simply as will be clear from the following description. The Surqualet has a cylindrical metal case, which incidentally is in a plastic jacket allowing the sterilizer to be handled when in use. From a hook inside the lid is suspended a perforated metal basket divided into

four sections. One of these sections contains a removable needle platform which carries six needles in such a manner that they cannot contact or damage each other during sterilization. The other three sections are for sterilizing syringes, forceps, dressing scissors, etc.



After sterilization, the basket is removed from the Surqualet by lifting the lid, from which it is suspended, and it is placed on a tray. A special syringe extractor, which is kept permanently in the basket and is therefore sterilized, is taken from its place on the needle platform and placed over the nozzle of the syringe by which means the syringe is withdrawn from the basket. The syringe is then held by the barrel while the extractor is replaced in the basket. The syringe nozzle is then inserted in the needle mount which, being held vertically in the basket, can be fixed to the syringe nozzle without being handled in any way.

A further advantage that will be found with the Surqualet Electric Sterilizer is its portability. It measures only 8½ inches high and 4½ inches in diameter at the base. It will operate on any electricity supply A.C. or D.C. from 200 to 250 volts. It is provided with 6 feet of cable with universal plug that will fit either the normal lamp or wall socket. Thus it can, if desired, easily be taken by the practitioner on his rounds and, if necessary, used in the home of a patient. It will boil in 10 minutes and has a working capacity of one pint of water.

#### ABSTRACTS

*Treatment of Pruritis Ani by Radiotherapy (Consideraciones sobre el tratamiento del prurito anal con radioterapia).* Gay Prieto and Jaqueti del Poze (1949): *G. Actas Dermo-Sif.* **50**, 790-798.

Review of literature and notes on dosage used by various authorities. The authors reserve radiotherapy for cases in which pruritis persists in spite of removal of any obvious cause and after other treatment methods have failed. Their own method is to give 500r in weekly fractions of 100r; 70kv., 4 ma., 25 cm., 0.5 mm. Al filter. In 40 cases so treated they report 22 as cured, 16 improved and two failures. There were nine relapses. No accidents occurred.

*Seronegative Secondary Syphilis.* Kuhl, J. W., and Sauer, G. C. (1949): *J. Invest. Derm.*, **13**, 91.

The incidence of seronegative secondary syphilis has been variously reported as between 10% (Filder) and nil (Kampmeier). In a study of 2,604 cases (1,732 untreated) the incidence of seronegativity (quantitative Kahn) was 1.6% of all cases and 1.15% of untreated cases. When all clinical and laboratory data were analyzed not a single proved case of seronegative secondary syphilis was found. Error is due to misdiagnosis, false negative serum tests or clinical error. With modern tests seronegative secondary syphilis is very rare if it exists at all.

\*South African Representatives: Chas. F. Thackray (S.A.) (Pty.) Ltd., 301 Boston House, Strand Street, Cape Town; also at 23 Orion House, 235 Bree St., Johannesburg.



## A KNIFE BLADE IN THE ORBIT

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A foreign body may occasionally enter the confines of the orbit and remain dormant to a greater or lesser extent. Seldom, however, does it fail to cause discomfort or interference with function. Apart from damage to the eye-ball or the surrounding structures at the moment of entry, infection is the main source of subsequent trouble, and orbital suppuration follows. Finally, if the foregoing factors are minimal, the disfigurement caused will serve to draw attention to the condition.



On examination the left eye was seen to protrude further forward than the right, the upper lid was swollen and heavy, the conjunctiva was very chemotic. There was a scar on the upper lid about 1 cm. long. Ocular movements were limited in all directions. Visual acuity was R 6/6 and L 6/36 (uncorrected). Ophthalmoscopic examination revealed a hazy vitreous with the fundus fairly well seen. There was little, if any, disc swelling. At the macula there was a tiny hole.

On palpation, a hard swelling was found under the orbital margin, in line with the scar and apparently fixed to the bone of the orbit. It caused pain when one attempted to move it. It did not appear to abut directly on the globe. One had little doubt that this was the missing blade (Fig. 1).

X-ray of the orbit revealed an elongated opaque object about 4 cm. long lying almost directly antero-posterior above and to the outer side of the globe, the anterior end very near the surface (Fig. 2).

**Operation.** Under general anaesthetic a 2 cm. incision was made in the upper lid below the brow and above the scar. By exploration backward the anterior (broken) end of the knife blade was laid bare. The blade was by this time well encapsulated by fibrous tissue which served to bind it down firmly to the periorbita. It was decided that to attempt to excise the whole encapsulated structure might endanger the eye-ball and damage the upper and lateral recti even further as well as nerves and vessels. The blade was therefore seized with short stout dissecting forceps, loosened by a side to side movement and gradually extracted (Fig. 3). Bleeding was minimal. The superficial part of the fibrous capsule was excised. Penicillin solution was instilled. The wound was closed by interrupted silk sutures.

Healing was uneventful. The swelling subsided to a large extent but there was a residual ptosis due partly to oedema and partly to muscle weakness. The chemotic conjunctiva took much longer to recede.

On 5 July 1949 the movements were still limited, mostly in the lateral direction. The fundus showed a certain amount of oedema and the macular hole was clearly visible. (This is often found after violence to the globe, and is permanent.) Function, however, was very satisfactory: Vision L 6/36 (central scotoma) with full peripheral field.

The appearance of the eye had improved less than one hoped for, but can be ascribed to the fibrosis and oedema that would be more or less permanent.

I am indebted to Dr. J. S. du Toit for permission to publish this report, and to Mr. McManus, of the Department of Surgery, for the photographs.

The following instance is remarkable for the time lapse, as well as the equanimity with which the patient regarded the course of events. The history was interesting.

A native female from the countryside, aged 23, came up to the Eye Outpatient Department on 14 June 1949 complaining of pain and swelling around the left eye. She stated that about three months previously her husband, whom she tried to fetch home from a neighbour's house, showed his annoyance by drawing his pocket knife and stabbing her just below the left eyebrow. The eye was very swollen and painful afterwards but gradually improved. The swelling and disfigurement not disappearing she decided to visit the hospital. She told us that the point of the knife was broken off after the stabbing and could not be found.

## ANTABUSE

## A CONTRA-INDICATION TO ITS USE

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and

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On 14 October 1949, one of us (F. D.) was consulted by an unmarried male European club steward aged 35 years. He stated that for the past seven years he

had drunk on the average one bottle of brandy a day and that he wished to be cured of this habit.

*Previous History.* Nil of note. He has always been healthy.

*Examination:* Pulse rate, 78 per minute, regular. Heart. Apex beat, fifth left interspace inside the left midclavicular line. Sounds, normal. Blood pressure, 150/110 mm. Hg.

Routine examination of other systems shows no signs of organic disease

Treatment was commenced with antabuse.

The patient was instructed to take three 0.5 gm. tablets the first day and to keep on indefinitely with one 0.5 gm. tablet a day. He was asked to report back within a week.

He kept his appointment and was given 1 oz. of brandy to drink. After about 10 minutes he developed a tachycardia of 130 per minute. His skin became flushed and his conjunctivae injected. There was marked dyspnoea and the patient complained of blurring of vision. He was found to have developed cardiac murmurs—a well-marked apical systolic bruit and also a faint blowing aortic diastolic murmur.

On 3 November an electrocardiogram taken at 10.30 a.m. showed a reading within normal limits (Fig. 1). At 8.30 p.m. of the same day the patient was given 1 oz. of brandy and a tracing was taken 15 minutes later. The following interesting features were noted: Evidence of a supraventricular tachycardia with slurring of T<sub>2</sub>, depressed RST<sub>2</sub> and inversion of T<sub>2</sub>. Lead 4 also showed a depressed RST complex. These are all suggestive of a cardiac ischaemia.

It would thus appear that the treatment of chronic alcoholism with the new substance antabuse necessitates the exercise of caution in certain subjects. It is known that diabetics are a bad risk, due to the increased concentration of acetic aldehyde in the blood, precipitating a coma.

From the case quoted above it would appear that patients suffering from demonstrable cardiac lesions and angina of effort should not be given this drug and that even in apparently normal subjects due caution should be exercised.



## VERENIGINGSNUUS : ASSOCIATION NEWS

## SOUTHERN TRANSVAAL BRANCH

A very enjoyable evening was spent by all who attended the Annual General Meeting of the Southern Transvaal Branch on 17 January 1950.

Dr. R. Geerling, the outgoing President, was able to welcome Dr. A. W. S. Sichel, the President of the Association, who, while on other business in the area, had specially extended his stay in order to be present.

During the course of the evening Dr. Sichel presented miniature replicas of the Presidential Badge of the Association to Dr. A. J. Orenstein and Dr. J. H. Harvey Pirie, past Presidents of the Association, and in making the presentations Dr. Sichel said that it had been decided by Federal Council to present a replica of the Presidential Badge to past Presidents of the Association, as it was felt that they should have permanent recognition of the high office they had held and the excellent work they had done. The replica could be worn on formal occasions.

In presenting the Badge to Dr. Orenstein, Dr. Sichel referred to the great debt of gratitude owed to Dr. Orenstein for the pioneer work he had done for the Association. It was he who was largely instrumental in carrying out the negotiations in 1928 for the establishment of the Medical Association of South Africa, which at that time was part of the British Medical Association. He had afterwards held office for a period of six years as the first President of the Medical Association of South Africa.

Dr. Orenstein then suitably replied. He stated that he had seen the Association grow from very small beginnings to the large organization it now was, and the Southern Transvaal Branch grew to the largest in the Union. His final word of advice to members was to follow Goethe's modification of the Commandment in the Gospel of St. John, viz.: 'Love one another, but if you cannot love one another, then leave one another alone.'

Of Dr. Pirie, Dr. Sichel mentioned that they had both graduated at the University of Edinburgh, had always been close friends, and he felt it a privilege in following Dr. Pirie into the Chair of the Association.

Dr. Pirie in his reply mentioned that his service as President of the Association had occurred during the war years, and he looked upon the replica presented to him this evening as his war decoration.

Dr. Sichel was then called upon to present the Bronze Medal of the Association to Mrs. A. Sutherland Strachan, on behalf of the late Professor A. Sutherland Strachan, and to Dr. B. G. Melle.

In presenting these medals, Dr. Sichel mentioned that the Bronze Medal was awarded for outstanding services to the profession and the Association. Only three previous awards of this medal had been made by the Association. He then called on Mrs. A. Sutherland Strachan to accept the medal on behalf of her late husband, Professor A. Sutherland Strachan, who had been held in high esteem and affection by the whole of the Association.

In making the presentation to Dr. Melle, Dr. Sichel said that Dr. Melle had been an old personal friend of his since their school days, and it gave him great personal pleasure to make the award.

Dr. Melle replied appropriately.

**Presentation to Mrs. Coppinger.** Presentations were then made to Mrs. Coppinger on the occasion of her retiring from the post of Secretary to the Branch.

In a happy speech Dr. Geerling stated that Mrs. Coppinger had been the Secretary of the Southern Transvaal Branch since 1928. She had done an enormous amount of work for both the Branch and the Association as a whole. Very few of our members really knew the enormous amount of work which passed through the offices of our Branch, and this work had always been done by Mrs. Coppinger with a smile and in a manner which showed it was never a burden to her.

When she first joined the staff, the membership of the Branch was 270, and now it had grown to over 1,000. The growth of the membership was in no small way due to her

personal efforts. Mrs. Coppinger had not only done the work of this Branch, but had also taken part in the general work of the Association, so that she had at times acted as Secretary to the Federal Council and as Manager of the Agency in this area. She had arranged for meetings of the different Groups and had also acted as Secretary to the National Cancer Association.

Dr. Sichel, on behalf of the Head Office, and in recognition of the valuable work which Mrs. Coppinger had done for Federal Council, then presented her with a cheque and wished her many years of happiness.

This was followed by Dr. Geerling's presenting a canteen of cutlery and a cheque on behalf of the Branch. He mentioned that this cheque was the result of the efforts of the Committee of *The Mrs. Coppinger Appreciation Fund* and represented donations not only from within the Branch, but from members of the Association throughout South Africa.

Tributes to Mrs. Coppinger and her work for the Branch were paid by Dr. Melle, who felt proud that he actually 'found' Mrs. Coppinger when he was Honorary Secretary of the Branch, and by Dr. T. Schneider, the present Honorary Secretary.

Dr. Alice Cox said that much had been heard about the virtues of Mrs. Coppinger, but nothing about her misdeeds, and for these misdeeds, she suggested that Mrs. Coppinger be sentenced to appear in the 'Rogues Gallery' at Medical House, for which purpose Mrs. Coppinger should produce a photograph suitably framed within 14 days.

Mrs. Coppinger replied thanking the various people for their kind words and the Branch for its generosity, and mentioned how happy she had been during her many years' service.

**Declaration of the Result of the Ballot.** The result of the Ballot for Officers of the Branch was then declared as follows:

**President:** Dr. Maurice Shapiro; **Vice-President:** Dr. Alice Cox; **Hon. Secretary:** Dr. T. Schneider; **Hon. Treasurer:** Dr. Seymour Heymann.

#### Members of Branch Council:

Dr. Cyril Adler, Dr. F. P. Reid, Dr. A. L. Agranat, Dr. L. S. Robertson, Dr. Rose Baranov, Dr. E. Rocher, Dr. N. R. Smuts.

**Induction of President.** Dr. Geerling, after thanking the members of the Branch and Branch Council for the help they had given him in the past year, and after thanking the Honorary Secretary particularly for the work he had done, inducted Dr. Maurice Shapiro into the Presidential Chair. In doing so he mentioned that Dr. Shapiro had rendered yeoman service as a member of the Augmented Executive Committee during the negotiations with the Transvaal Province, and he wished him a happy year of office.

Dr. Shapiro thanked the outgoing President and the members of the Branch for the honour they had paid him in electing him to the Presidency of the Branch. He deeply appreciated this honour which he would do his best to deserve.

**Valedictory Address by Retiring President, Dr. R. Geerling, on 'Encephalitis Africana'.** Dr. Geerling then gave his valedictory address on 'Encephalitis Africana'. This proved a particularly interesting paper.

The President thanked Dr. Geerling for his address after which the meeting closed and a very happy gathering took place over the coffee cups when the recipients of the medals were congratulated and members wished Mrs. Coppinger 'Godspeed and Good Luck'.

#### REPORT OF THE HONORARY SECRETARY: 17 JANUARY 1950

**Mr. President, Dr. Sichel, Ladies and Gentlemen:** I have the honour to present to you a report on the activities and work of this Branch for the year ending 31 December 1949.

**1. Membership.** The total membership of the Branch is 1,025. Of these 1,019 are active members—an increase of 8 on the previous year. There are 3 complimentary members and 3 Honorary members.

During the year 36 new members were elected, 4 were re-elected and 24 were transferred from other branches, making the total accessions 64.

The following losses were sustained:



Transferred to other branches ... ..	34
Resignations ... ..	13
Deceased ... ..	5
Struck off for non-payment of subscription ... ..	8
Address unknown ... ..	8
<b>Total ... ..</b>	<b>68</b>

The result of our dispute with the Province has shown what our profession can do if all its members stand solidly together. It makes it all the more necessary that we should do our utmost to see to it that every medical practitioner practising in our area becomes a member of our Association. Although our membership represents well over 80% of the total number of medical practitioners, we must still strive for the goal of 100% membership.

2. *Obituary.* During the year we have suffered through death the loss of: Dr. W. Alexander, Dr. G. D. Laing, Dr. W. Sachs, Dr. F. H. Napier and Dr. A. Sutherland Strachan.

3. *Branch Meetings.* Monthly meetings of the Branch were held regularly with the exception of July, September and December. No meeting of the Branch was held in September owing to Congress at Cape Town.

In January a combined meeting of the Southern Transvaal Branch and the University of the Witwatersrand Medical Graduate Association was held when Dr. Lucy Wills of the Royal Free Hospital, London, spoke on 'The Aetiology of Macrocytic Anaemias'.

In March a symposium was held on the Rh Factor when Dr. Maurice Shapiro spoke on the 'Immunological Aspect' and Dr. Seymour Heymann gave a description of the Types of Erythroblastosis Foetalis and an account of the clinical course.

In April Dr. D. Gamsu read a paper on 'Some Recent Advances in Neuro-Surgery' and Dr. J. Wolpe read a paper on 'The Genesis of Neurosis'.

At the May meeting a lecture was delivered by Dr. Paul Wood, who visited South Africa at the invitation of the Visiting Lecturers' Trust Fund of the Students' Representative Council of the Witwatersrand. He spoke on: 'The Diagnosis and Treatment of Angina Pectoris'.

In June Dr. L. F. Freed read a paper on 'The Philosophy of Integral Medicine'.

At the August meeting a symposium was held on: 'Some Recent Advances in the Treatment of Pulmonary Tuberculosis'. Dr. Maurice Pringle dealt with the 'Medical Aspect' and Dr. D. Adler with the 'Surgical Aspect'.

At the October meeting Prof. W. E. Underwood, Professor of Surgery at the University of the Witwatersrand, read a paper on: 'Some Recent Advances in Surgery'.

The November meeting was a combined meeting with the Medical Graduate Association, when Professor Charles Best, Professor of Physiology, University of Toronto, and Director of the Banting and Best Department of Medical Research, spoke on 'Some Aspects of Research in my Laboratories'.

The average attendance per meeting for the year was 106.

4. *Council Meetings.* There were 12 Council Meetings and 3 Special Council Meetings during the year—the average attendance being 12. The Executive Committee met on 8 occasions, and the Contract Practice Committee had 4 meetings. There were 2 meetings of the Ethical Committee.

5. *Federal Council.* The following members represented the Branch on the Federal Council: Johannesburg and S. Eastern Transvaal and Swaziland Divisions: Dr. J. A. Bell, Dr. J. Black, Dr. L. I. Braun, Dr. R. Geerling, Dr. C. A. H. Green, Dr. T. Schneider and Dr. Maurice Shapiro; Potchefstroom Division: Dr. A. C. Schulenberg; Vereeniging Division: Dr. C. G. S. van Heyningen; West Rand Division: Dr. L. O. Vercueil.

6. *Free Hospitalization.* The Augmented Executive Committee, first under the Chairmanship of Dr. J. H. Harvey Pirie, and during his absence overseas under that of Dr. L. I. Baun, has continued its negotiations with the Province in its efforts to make final arrangements under the Transvaal Hospitals Ordinance. These negotiations appear to have been satisfactorily completed, and at the present time the various

hospital Boards are making their selections for appointments to the part-time and full-time staffs.

The Augmented Executive Committee is, of course, holding a watching brief for all of us and we must thank the members of this Committee for all the work they have put in on our behalf.

7. *1951 Congress.* During the past year an Organizing Committee has been appointed to make the preliminary arrangements for the Congress of 1951, which will be held in Johannesburg and will consist of a combined meeting of the Medical Association of South Africa and the British Medical Association. You will be notified from time to time of the activities of this Organizing Committee, which is under the Chairmanship of Dr. A. J. Orenstein and of which the Secretaries are Dr. Moross, Dr. Geerling and Dr. Anning. I trust that every member of this Branch will co-operate with this Committee in making the Congress a tremendous success.

8. *General.* On a previous occasion I mentioned in my Annual Report that I was of opinion that our Association should take a greater interest in educating the public in matters of Public Health. A great deal of publicity of an educative character could be carried out by us, and I would make a plea that Branch Council should seriously consider the matter of having regular articles inserted in the lay press on subjects such as malnutrition, tuberculosis and preventable diseases. I feel that in this way a great deal of good could be done among the general population and the Medical Association could in that way take its proper place in a campaign to eradicate many diseases of a preventable character.

9. *Entertainment.* Once more it has been found impossible to cater for the entertainment of our members. I, for one, feel that we should try to hold some affairs of a social nature for the benefit of our members, but unfortunately any affair of this kind must take a deal of organizing, and Branch Council has felt that it has had so much work of a serious nature to carry out, that there has been little time to devote to the lighter side of Association activities. I would put forward the suggestion that this Branch forms an Entertainment Committee consisting of members, not necessarily on Branch Council, which could go into the question of providing some social activities for our members.

10. *Thanks.* Once more it is a pleasure for me to record my thanks for the co-operation and goodwill received from the President and Members of Council during the past year, factors which have helped tremendously in carrying on the work of this Branch. I trust that this pleasant relationship will continue with the incoming Council.

I also wish to thank Mrs. Coppinger and the members of her staff for the enormous amount of assistance they have always given me. The smooth working of the internal administration of our office has been due entirely to their deep sense of duty, and every one of the members of our Branch must feel greatly indebted to them.

Mrs. Coppinger, as you know, is on the point of leaving us, and I should like to extend a very special 'Thank You' to her for her untiring efforts in the cause of the Association in general, and this Branch in particular. I know that my duties would have been very much more onerous and exacting if Mrs. Coppinger had not been here. The enormous amount of work she has done on our behalf can never be realized by anybody who has not actually worked in the administration of this Branch, and there is no doubt that we shall miss her very much indeed. I am sure you will all join with me in wishing her the very best of luck in the future, and hope that she will enjoy to the full many years of well-earned leisure.

She has been succeeded by Mrs. M. Collis, who, I am sure, will carry on the high traditions set by Mrs. Coppinger.

Finally, I must thank all our members for the interest they have taken in the Branch for the past year, and trust that this will be sustained in the future. I must thank them for the confidence they have placed in me in electing me to this office for the fifth year in succession. I trust that this confidence will not be misplaced and that the very cordial relations which have always existed between us will continue.

T. Schneider,  
Hon. Secretary.

ANNUAL MEETING HELD AT MEDICAL HOUSE, 5 ESSELEN STREET, JOHANNESBURG, ON TUESDAY, 17 JANUARY, 1950.

REPORT OF HONORARY TREASURER: DR. ALICE COX.

In presenting to you the Balance Sheet and Accounts of the Southern Transvaal Branch of the Medical Association of South Africa for the year ending 31 December 1949, the following should be noted:—

Income for the year ... ..	£4,769	19s.	9d.
Expenditure ... ..	£4,558	18s.	5d.
Leaving a Balance of Income over Expenditure of ... ..	£211	1s.	4d.

This excess of income over expenditure is £664 17s. 10d. less than for the preceding year.

The fixed assets remain as heretofore.

Income from subscriptions decreased by £300 0s. 0d.

An analysis of the expenditure during 1949 as compared with 1948 is as follows:—

1. General expenses have decreased by approximately £36.
2. The Branch's expenditure for salaries during the year was £1,722 11s. 4d. as compared with £1,588 15s. 6d. for 1948, but £270 must be deducted from this amount recovered from the National Cancer Association making a total of £1,452 11s. 4d.
3. Donations for the use of the hall have been received from the Christo Bayers Club, John Saner Club, Witwatersrand and Pretoria Public Health Consultative Committee and the South African Society of Physiotherapists amounting to £56 5s. 0d.

4. The expenses in connection with Medical House amount to £900 13s. 0d. less £25 received from the National Cancer Association=£875 13s. 0d., which reflects an increase of £380 17s. 7d. This is accounted for by repairs and renovations to Medical House.

5. Legal expenses regarding Free Hospitalization amounted to £11 10s. 0d.

Interest on the Bond was not reduced during the year and the Bond still stands at £1,750 at 4%.

As regards light, water and gas, there was an increase of £13, which is largely accounted for by the use of the building by other bodies and the University for lectures.

As excess of income over expenditure is only £211 0s. 0d., it will be impossible to make any reduction in subscriptions. In this connection it will be of interest to members to know that as from the year 1951, all subscriptions will be collected by the Head Office in Cape Town.

Salaries will be less during 1950, as the Staff has been re-organized.

An amount of £682 0s. 0d. has been collected as a levy from members regarding Free Hospitalization which covers the Branch's expenditure to date.

The balance of cash in the Bank at 31 December 1949, amounts to £2,086.

#### REPORT OF THE CONVENER OF THE STANDING COMMITTEE ON HEALTH SERVICES IN THE UNION OF SOUTH AFRICA\*

South Africa, in common with most civilized countries, has felt the need of, and has striven towards, an improved health service for its people and the main aim has been to evolve a Medical Service which can be placed on a National basis.

Different approaches to this problem have been made in different countries and in some countries like Great Britain, Sweden, New Zealand, Canada, the policy of the Government has now been translated into medical schemes through specific Acts of Parliament.

We have gained much in experience by watching develop-

\* This report was adopted in principle by Federal Council at its meeting held on 16 September 1949.

ments in other countries and through our country's reports of commissions, surveys, etc., which culminated in the National Health Services Commission Report which was tabled in our House of Assembly in February of 1945.

The Medical Association of South Africa, through its Federal Council, has now felt that the time has arrived when an opinion can and should be expressed, that could lead to the formulation of a definite programme to be embarked upon to produce an improved Medical Service on a National basis. In fact we feel that it is our bounden duty to play our part in assuming our responsibility in establishing and pushing the expansion of our Medical Services on a National basis on the lines which we would favour.

In order to ascertain the general consensus of opinion of the Medical Association and its will in this connection, the following steps were taken through Federal Council:

1. A Standing Committee on Health Services in the Union of South Africa was appointed in November 1948, and consisted of two representatives from each of the four Provinces.
2. During May 1949, a comprehensive Circular (No. 4) was sent to the Secretary of each Branch for consideration of that Branch as well as by each Division within the Branch areas. It was also published in the *S.A. Medical Journal* during this month.

This circular indicated the lines along which the discussions should take place in order to reach decisions which could be correlated in the form of a report for consideration by Federal Council.

3. The answers received from the Branches and Divisions who replied to Circular No. 4 were sufficiently in agreement upon the basic principles enunciated in this report to be able to state that this report is based on the consensus of opinion of the Medical Association of South Africa.

Before dealing with the purely medical aspects of the problem dealt with in this report, it is essential to draw attention to an all-important issue which, if not faced in a practical way, will stultify to a large extent any efforts and contributions which the Medical, Dental and Nursing professions can bring to this problem of health to the Nation.

This issue involves all steps leading to better living conditions with improved housing, nutrition and sanitation, which are fundamental to good health.

The prevention of disease by inoculation and curing disease in its early stages are excellent, but it must be remembered that good living conditions, including good nutrition, housing and sanitation, are equally important.

While housing and nutrition is a social problem and not directly a Medical problem, any neglect in regard to these results in an increase in the prevalence of disease and the necessity for medical care.

Two very important features which should not be lost sight of in any scheme ultimately adopted in our country and which must be modified only in exceptional circumstances are:

1. Wherever possible the free-choice-of-doctor principle and the traditional 'doctor-patient' relationship should be jealously guarded.

2. Socialized medicine with an attempt to make all medical services completely free to everyone (except to the very poor under-privileged groups) must be avoided for the following reasons:

(a) Our country is not, and is not likely ever to be, in a financial position to initiate such a scheme.

(b) Experience has shewn that wherever this free service is sponsored by the Government, the demands have, without exception, far exceeded the estimated requirements normally needed by the participants in such a scheme.

(c) The sound limiting principle that the Government should supply through the State a reasonable minimum of medical care. This minimum standard must be compatible with the available resources of our country and must not be so high as to destroy the interest of men in securing something better through their own efforts.

Our recommendations are based on the following general appreciation of the position in our country:

A. Because of the size of our country, the make up and distribution of the population and other constitutional and economic reasons, together with general principles and medical man-power, we are convinced that a drastic revolutionary

National Health Service based on the National Health Services Commission Report is impracticable and undesirable.

The only solution we feel is in the direction of a Medical Service based on foundations already laid and practices tried here and elsewhere.

To put it in another way, to consider the future expansion of our present Medical Services in our country on a National basis.

*B. Individual health* which involves the curative Health Services and for which the relationship between the individuals making up the public on the one side and the individual medical practitioners and the medical profession on the other side.

Then equally important is the community health which involves the preventive Health Service of all the communities making up the population as a whole.

Whilst these two Health Services should and must eventually be fully catered for and integrated more and more, it is a practical necessity in order to avoid delay, to allow these two important Services to evolve on parallel lines. The one, namely the preventive Health Service for the communities, is so obviously a short-term policy which can be started forthwith within our financial resources and man-power, while the other—the curative personal health service—would have to be evolved as a long-term policy with adjustments and growth depending on resources, financial and Medical man-power.

The preventive Health Service is already firmly established on sound foundations in the case of our larger Local Authorities, and there is no sound reason why these services should not be expanded forthwith to cover the whole of our country.

It is not feasible for most of our smaller Local Authorities to have full-time Health Departments, but it has already been demonstrated in South Africa that for purposes of a preventive Health Service several Local Authorities can be brought together for this purpose into regions which can be served adequately and economically by whole-time Health Departments.

To finance these projects it will become necessary for the State to subsidize and assist the Local Authorities concerned to the extent to which they cannot help themselves.

The curative Health Service for the individuals becomes a much more complicated problem which requires the fullest co-operation between the medical profession, the public and the State. It is complicated because adequate medical care of the sick individual involves skilled attention in so many directions—the General Practitioner, the Specialist, the Laboratory Service, the Radiologist and the Hospital Services, together with medicines and appliances, etc. Any attempt to place these services within the economic reach of the whole population would be beyond the financial power of our country, but there is a desperate need for adjustments to bring about an improved state of affairs placed upon a sound agreed basis which can grow and develop systematically towards a reasonable standard and goal.

The Medical Association is in favour of the development of the curative Health Service being developed in two main directions, i.e.:

1. For the very poor and especially for areas such as the Native Territories, a salaried service on the District Surgeon basis, with polyclinics on the present Health Centre basis.

2. For the middle-income group—a Medical Aid Society-based service, with a Medical Service of general practitioners and specialists in their surgeries, and as a domiciliary service; the Hospital Service required for institutional treatment and the pharmaceutical service required.

This individual curative Medical Service should thus be considered in the light of the requirements of three main groups of people making up our population:

(a) *The very poor*, with special reference to the Natives in the Native Territories.

For these persons it is obvious that curative as well as preventive services should, in the main, be the responsibility of the Central Government. These people can contribute very little to any Health Service.

In the first instance the preventive side must be the first consideration of the Government.

The curative service can, however, be established solely in

the form of polyclinics, and in-patient hospital treatment where necessary, travelling medical units and maternity and district nurses services.

The medical and auxiliary personnel would have to be practically a full-time salaried one, with such help as can be obtained in a part-time capacity from medical practitioners practising in the areas concerned.

For the poor in scattered rural areas a similar Medical Service can be established through the expansion of the number of District Surgeons with strategically placed polyclinics and nursing centres.

(b) *The middle-income group.* The individual curative services of this Group can be met by means of Medical Aid Societies and an extension of these to incorporate as many of this group as possible. This form of 'Medical Aid Insurance' in which the individual contributes to his medical needs both of specialist and general practitioner services has proved satisfactory to both the members of these Medical Aid Societies and the Medical profession. A free choice of doctor and the doctor-patient relationship are retained for the good of both the public and the Medical profession.

Although Medical Aid Society practices may be more difficult to carry out in rural and scattered areas, it is possible for them to function through Agricultural Societies or similar organizations.

In this type of Health Service it is very important that these Societies should retain their identity.

There is a further type of this group which one might call the lower middle-income group. They have in the past provided for themselves through Sick Benefit or Sick Friendly Societies with a General Practitioner service only.

There is no reason why they cannot be incorporated in a Health Curative Service on a National basis, as well as specialist services, provided for them by subsidies from the Government. By means of subsidies it may be possible for those lower income groups to form themselves into a Medical Aid Society.

(c) *The well-to-do group.* In this group, which will form a very small percentage of the population, there is no need to provide any form of medical aid or any other type of medical service except a preventive Health Service affecting the community as a whole.

This group should retain their curative Health Service as they have done in the past by the employment of their choice of doctor (general practitioner and specialist) and the nursing homes.

*C. Hospital Services.* General Hospital service (this includes hospitals dealing with acute, chronic sick and convalescent cases; and excludes Mental Hospitals, Infectious Diseases Hospitals, Sanatoria, etc.), like so many of our other Medical Services in our country, has reached a fairly advanced stage of its development.

In the past this service has gradually grown and expanded as the responsibility of the Province through the creation of more and more beds to meet the requirements of the medical schools as teaching hospitals, as well as the needs of the poor who require institutional treatment and those who could not afford nursing homes.

The National Health Services Commission Report has brought this service into the limelight and the constitutional issue which established the responsibility of the Provinces in this respect gave rise to renewed activity on the part of the Province to strengthen their claim and hold on this service. Its expansion has now reached the point where this General Hospital Service, in the three out of the four Provinces, has threatened to encroach to an alarming degree upon the freedom of the profession on the one side and the Medical Services outside these Institutions on the other side—the Medical Service which should be the responsibility of the medical profession and the State, and whatever adjustments are made to meet the needs of the Nation in this respect should be settled between these two bodies at the highest levels.

At the present moment we have lost the true perspective of the position. We are now being forced into a position whereby the Hospital Services are being established on the understanding that it is the all-important service around which the other Medical Services must be modified to meet its requirements, instead of it being expanded to meet the requirements of the Medical Services outside these Institutions.



Your Standing Committee recommends to Federal Council the following constructive programme for the extension of improved health and medical care for the Union of South Africa. These recommendations are purposely set out in wide general terms which require future detailed planning by all parties concerned:

1. Sustained production leading to better living conditions with improved housing, nutrition and sanitation, which are fundamental to good health; we wholeheartedly support progressive action towards achieving these objectives.

2. Federal Council does not favour a revolutionary approach to the problem, as adumbrated by the Health Services Commission Report, but favours an evolutionary approach, utilising and expanding existing services.

3. An extended programme of disease prevention with a department for extension of organizations for Public Health Services so that every part of our country will have such services as rapidly as financial assistance and adequate personnel can be found.

This Service will include all the Preventive Health Services undertaken by the larger Local Authorities under the Public Health Act, including maternal and child welfare as well as midwifery services and district nursing services.

4. Increased general hospital facilities for all who require hospital treatment. This general hospital service requires urgent consideration at the highest levels to overcome the many misunderstandings existing today between the public, the medical profession, the Central Government and the Provincial Governments.

5. The individual curative Medical Service should be considered in the light of the requirements of three main groups of people making up our population, viz.:

(a) The very poor, with special reference to the Natives in the Native Territories.

(b) The middle-income group, and

(c) The well-to-do group.

6. The extension and development of the present services dealing with the mental health of the population, through its Mental Hygiene Service; the leprosy service, school medical service, etc.

J. P. de Villiers,

Convener.

Medical House,  
Cape Town.  
23 August 1949.

## IN MEMORIAM

### DR. C. M. MURRAY: AN APPRECIATION

The sudden passing of Charles Molteno Murray came as a great shock to his colleagues and the very wide circle of his friends both within the medical profession and without. Educated at Bishops, he proceeded to graduate at Cambridge and after his return to South Africa succeeded his father, the late Dr. C. F. K. Murray, in his practice at Kenilworth, Cape, where he was born. He worthily carried out the high ideals set by his father, not only in the dignity of his bearing, but in the strict observance of medical etiquette in his daily work among his patients and towards his colleagues. Both father and son in their respective times held the high office of President of the Cape Western Branch, a distinction perhaps unique in the history of the Medical Association of South Africa. Dr. C. M. Murray was a past-President of the now defunct Southern Peninsula Medical Society and for many years was on the honorary staff of the Victoria Hospital, Wynberg. He was one of the oldest and most respected members of the Cape Western Branch and served on many of its committees over a long period. His activities, however, went much further in that he was a member of Federal Council for a time and also a member of the then Colonial Medical Council. His chief claim to recognition for services rendered to the Association is in respect of the fact that for many years he acted as Honorary Secretary of the Head Office and Journal Committee of which he was a co-opted member at the time of his death. In 1945, at a time of grave crisis following the resignation of the late Dr. C. L. Leipoldt as Medical Secretary, Dr. Murray voluntarily undertook for

one year the onerous duties attached to that office in an honorary capacity. For this generous action on his part he earned the gratitude of the whole Association and largely owing to his distinguished service in this respect he was awarded the Bronze Medal of the Association.

He served with distinction in the South African Medical Corps in South-West Africa and France in World War I, and was awarded the D.S.O.

Dr. Murray at no time sought the limelight and owing to his retiring disposition was not as well known as he should have been, except to those of his colleagues with whom he worked in close contact. These comparative few appreciated his lovable character and his entire lack of affectation although on the surface to many of his colleagues he appeared the opposite.

Being in a position to retire from active practice comparatively early in life, he had leisure to indulge in his favourite recreations which were photography, shooting, fishing, motoring and golf, but a considerable portion of his leisure he devoted to the work of the Medical Association, yet not in the sense that he regarded it as a recreation. He found time to devote to public duties, and for a few years was a member of the Cape Hospital Board and its deputy Chairman for a while. He gave considerable time to planning of hospitals and served on several committees in this connection. He was a director of the Board of Executors at the time of his death.

Dr. Murray for many years interested himself in the study and cultivation of grass and established many contacts overseas with experts in this subject. In the Union he attained a considerable reputation as an expert in the laying of turf for golf courses and bowling greens and his services were frequently in demand by sporting clubs. He took special interest in golf course architecture and was regarded as an authority to the extent that he was invited from time to time by golf clubs all over the Union to plan the layout of their courses. He had a long connection with the Royal Cape Golf Club and at one time was its captain.

It is characteristic of the man that in his will he left a sum of money to provide for the upkeep of the playing fields of his old school and also a legacy to the Benevolent Fund of the Association.

It is not for me to attempt to embellish his character in conventional phraseology. I write about the man as I knew him and in simple language. To know him as I did was to respect him for the high standard he set in his professional career, to enjoy his companionship whether at meetings or on the golf course and to appreciate his knowledge of the little things that count. Never a frequent nor an eloquent speaker in debate, nevertheless, his quiet and unassuming manner of offering a suggestion where indicated made him a wise counsellor.

He possessed a keen sense of humour and on occasion would join in a mild legpull at someone else's expense with the greatest mirth; by the same token he enjoyed listening to an account of some humorous incident or himself related one with many a chuckle which he could scarcely suppress.

When requested to give assistance no task was too trivial to assign to him nor so unimportant as not to engage his closest attention.

Murray was the embodiment of the saying: 'A little thing is a little thing, but faithfulness in little things is a very big thing.'

We who worked so long with him will miss him sorely but we look back with gratitude to all that he did for the Association and we shall ever respect his memory. Farewell.

A.W.S.S.

## PASSING EVENTS

Mr. W. E. M. Wardill, F.R.C.S. (Eng.), formerly of Newcastle-on-Tyne, England, has commenced practice as a surgeon at Dumbarton House, Church Street, Cape Town. Telephone:—Rooms: 2-8080 and 2-5187; Residence: 6-6887.

Mr. Wardill is an Honorary Consulting Surgeon, Royal Victoria Infirmary, Newcastle-on-Tyne. He was formerly Honorary Surgeon, Tynemouth Victoria Jubilee Infirmary;

Honorary Surgeon, Babies' Hospital, Newcastle-on-Tyne; Surgeon-in-Charge, Department of Prostatic Surgery, Newcastle General Hospital; Surgeon-in-Charge, Maxillo-Facial Unit, Emergency War Hospital, Shotley Bridge, Co. Durham; Hunterian Professor, Royal College of Surgeons, England, 1928 (*Cleft Palate*); 1933 (*Cleft Palate*).

#### WHO APPOINTMENT OF A PSYCHIATRIST

The World Health Organization invites applications for the appointment of another psychiatrist to its Mental Health Section. The salary, which is free of income tax, is \$6,700 per annum, and the place of appointment is Geneva, Switzerland.

Those interested should communicate with the Personnel Office, World Health Organization, Palais des Nations, Geneva, Switzerland.

Dr. Albert Rabinowitz of 908 Medical Centre, Jeppe Street, Johannesburg, has been elected a Fellow of the American College of Chest Physicians.

#### THE SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL

A meeting of the South African Medical and Dental Council will be held in the Board Room, Department of Archives, Queen Victoria Street, Cape Town, commencing on Monday 6 March 1950, at 10 a.m.

Government Notice No. 13 dated 6 January 1950, deletes (on the recommendation of the South African Medical and Dental Council) the following registrable degree: University of Melbourne: Bachelor of Medicine and Bachelor in Surgery (M.B., B.S., Univ. Melbourne).

#### MEDICAL CONGRESS, 1951

A Joint Meeting of the British Medical Association and the Medical Association of South Africa will be held at the University of the Witwatersrand, Milner Park, Johannesburg, from 16-21 July 1951. An Organizing Committee has already been formed in Johannesburg with the following office-bearers: *Chairman*: Dr. A. J. Orenstein; *Vice-Chairmen*: Dr. B. G. Melle, Dr. J. H. Harvey Pirie; *General Secretary*: Dr. H. Moross; *Organizing Secretary*: Dr. C. C. P. Anning; *Medical Secretary*: Dr. R. Geerling; *Treasurer*: Dr. R. A. Krynauw.

Further announcements will be issued in due course, but in the meantime colleagues are asked please to note the date.

#### PNEUMOCONIOSIS EXPERTS AT SYDNEY

The fight against occupational diseases caused by the inhalation of dust was discussed by medical experts from 11 countries at a meeting called by the International Labour Office at Sydney, Australia, on 28 February.

During its two weeks' session, the International Conference of Experts on Pneumoconiosis discussed the problems of pathogenesis, clinical aspects and diagnosis of pneumoconiosis and present-day preventive measures. It also examined the possibility of defining minimum international standards of compensation for disability caused by pneumoconiosis.

Pioneer work done by the conference in 1930 (Johannesburg) and 1938 (Geneva) has increased the knowledge concerning lung diseases caused by mineral dust.

Delegates to the meeting included medical experts from Australia, Canada, Denmark, France, New Zealand, Poland, Sweden, Switzerland, the Union of South Africa, the United Kingdom and the United States. In addition five international experts nominated by the ILO also attended the session.

## REVIEWS OF BOOKS

### THE HEBREW MEDICAL JOURNAL

*The Hebrew Medical Journal*. Editorial Office: 983 Park Avenue, New York 28, N.Y., U.S.A.

The appearance of Volume 2, 1949 of *The Hebrew Medical Journal* (Harofé Haivri), concludes the 22nd year of publication of this bilingual, semi-annual Journal, edited by Moses Einhorn, M.D.

Written in Hebrew, with English summaries, the Journal is a contribution to the development of Hebrew medical literature and thus facilitates teaching in the newly-established Hebrew University-Haddassah Medical School in Israel.

In this issue a detailed article is presented on *Scoliosis* by Samuel Kleinberg, M.D., and Prof. Arnold Kutzinski gives a comprehensive survey on *The Psychopathological Problems of the Jews in Israel*.

There is a special section devoted to Historical Medicine which contains three interesting essays: *Medical and Anatomical Terms in the Pentateuch in the Light of Egyptian Medical Papyri* by Prof. A. S. Yahuda; *Jews as Intermediaries of Medicine and Natural Science during the Middle Ages* by Zussmann Munter, M.D.; *Al-Qirqisani's Essay on the Psychophysiology of Sleep and Dreams* by Dr. Leon Nemoy.

Under the heading of *Personalia* there are several articles paying tribute to Dr. Solomon R. Kagan on the occasion of his sixtieth birthday. Dr. Kagan is a well-known authority on Jewish medicine, medical biography and bibliography.

### CRIMINAL ARSENICAL POISONING

*The Trial of Madeleine Smith (Notable British Trials Series)*. Edited by F. Tennyson Jesse. (Pp. 413, with illustrations. New edition. 15s.) London: William Hodge and Company Ltd. 1949.

*Contents*: 1. The Trial—First Day, Tuesday 30 June 1857. Evidence for the Prosecution. 2. Second Day—Wednesday 1 July 1857. 3. Third Day—Thursday 2 July 1857. 4. Fourth Day—Friday 3 July 1857. 5. Fifth Day—Saturday 4 July 1857. 6. Sixth Day—Monday 6 July 1857. Evidence for the Prosecution concluded. 7. Evidence for the Defence. 8. Seventh Day—Tuesday 7 July 1857: The Lord Advocate's Address to the Jury. 9. Eighth Day—Wednesday 8 July 1857: The Dean of Faculty's Address to the Jury. The Lord Justice-Clerk's Charge to the Jury. 10. Ninth Day—Thursday 9 July 1857: The Lord Justice-Clerk's Charge to the Jury (contd.). The Verdict. Appendices.

Messrs. William Hodge and Company Limited have placed the medical profession in their debt by bringing out the third edition of this extraordinary poisoning case. Even after a lapse of over 90 years the verbatim record of this case is a most valuable lesson in the medical approach to the unravelling of a case of alleged arsenical poisoning. There was, in this trial, a very full account of the clinical and toxicological features of the illness from which the deceased suffered and the skill with which the medical evidence was led as well as cross-examined, remains a most useful example to the modern medical practitioner who may be faced with a similar problem. In the case of Madeleine Smith, arsenic was used in powdered form (arsenious oxide) and in this form arsenic has not been used so commonly in recent years for homicidal purposes.

The pattern followed by the Defence in cases of arsenical poisoning seems to be fairly well defined and even predictable, and in this respect the volume under review is entirely modern in the strategy and the technique the barristers employed.

There is first of all an attempt to canvass the cause of death as possibly not being due to arsenical poisoning but to one or other of the natural disease processes which may present with identical symptoms. In the case of Madeleine Smith an attempt to attribute the death to cholera, whether British or Asiatic, was foredoomed because over 80 grains of arsenic were found in the stomach contents. Because the Defence was obliged to concede that death was due to arsenical poisoning, there was left unsettled, even to this day, one of the most important points in the symptoms and signs of arsenical

poisoning, viz. whether jaundice can occur in acute inorganic arsenical poisoning. The fullness with which this issue was considered makes the present record a most valuable document from this point of view alone.

The other part of the pattern that unfolds in the Defence taken in connection with criminal arsenical poisoning is that the poisoning was not homicidal but accidental or suicidal. These are the only three possibilities which ever need to be considered in any case of any kind of poisoning and it is significant that one of the main lines of Defence in the case of Madeleine Smith was that the arsenic had been taken suicidally. This is strongly reminiscent of the very able line taken in the case of Rex versus Mrs. Maria Lee, but in both cases this strategy was unsuccessful.

The astuteness of the clinical observations about sore throat, conjunctivitis, possible changes in the voice (all points which have arisen in subsequent and more recent cases of criminal arsenical poisoning in South Africa) is a feature of the very sound way in which the attending physicians dealt with the case.

There are also valuable data in this record about the psychology of suicides, the fact that they often make their intentions clear beforehand, and the demeanour of innocent persons when convicted of a capital offence. This last possibility is always of disturbing concern to the medical witness whose expert evidence may have been a necessary link in the chain of evidence required to establish the issue.

The interesting advance in the investigation of cases of arsenical poisoning which has taken place in more recent decades has been the analysis of the hair and the nails, a point not noted by the Editor in the Introduction. In the days of this trial, overmuch importance was perhaps attached to the detection of arsenic in the vomit and there can be little doubt that information which could have been obtained, had chemical methods permitted analysis of the hair and nails in those days, would have thrown much light upon the period during which the deceased had ingested arsenic.

One most valuable feature of this volume is the re-printing of the original articles which appeared in *Chambers' Edinburgh Journal* and *Blackwood's Magazine*, dealing with the arsenic-eating habit of the Styrian peasants. Contemporary textbooks on forensic medicine and toxicology have all failed to document this almost legendary story and it is most important for those who are concerned with either the medical or the legal aspects of arsenical poisoning, to know that these interesting, even if highly incredible and improbable communications, are now available in a very accessible form.

One of the striking features which emerges from the trial of Madeleine Smith seems to be that arsenical pigmentation of the skin can possibly develop within about seven or eight days. The evidence for this period is not absolutely certain, as Madeleine Smith was found not guilty on the first charge; but this extraordinarily interesting possibility is raised.

All in all, it is obvious that this edition of *The Trial of Madeleine Smith* contains an amount of material of prime importance to medical practitioners whether they are engaged in forensic work or not. It can be recommended as a most notable addition to the library of the practising doctor.

#### GERIATRICS

*The Second Forty Years.* By Edward J. Stieglitz, M.S., M.D., F.A.C.P. (Pp. 317. With 18 figures. 15s.) London: Staples Press Limited.

**Contents:** 1. How Old is Old? 2. The Biology of Senescence. 3. What Senescence Means to Us. 4. The Hazards of Senescence. 5. Life with a Handicapped Heart. 6. High Blood Pressure. 7. Nutrition in Later Years. 8. Sex and Age. 9. The Question of Cancer. 10. The Point of View. 11. Wise Investment of Leisure. 12. An Aging People. 13. Constructive Medicine.

The title of this book is somewhat deceptive. It refers to the years after the age of 40, and the writer is an American physician addressing the lay public with the aim of giving advice that will enable ageing and aged persons to maintain reasonably good mental and physical health. The author is the Editor of *Care of Aging and Aged*, a System of Geriatric

Medicine by many authors, and is well qualified to write on this topic.

From the voluminous literature on the subject he has gathered together information on diet, exercise, cardiovascular disease, cancer, sexual potency and, lastly, the psychological aspect of ageing, perhaps the most urgent problem that afflicts the middle-aged and old.

The book is written for the most part in pleasing, non-technical language, but there is no doubt that at times the descriptions become either too involved for the average lay reader, or are open to the criticism that they provide the little knowledge that may prove a dangerous thing. This is compensated for by the excellent summaries that close some of the chapters.

With the increasing numbers of old people in the general population, there has grown a demand by the lay public for information of the kind provided in this book. The status of the author and the method of presentation guarantee its value and doctors may recommend this book with confidence, not only to patients in the second forty years, but also to those approaching the close of the first forty years.

#### CANNED FOODS

*Canned Foods. An Introduction to Their Microbiology.* By J. G. Baumgartner. (Pp. 278 + x. With 32 illustrations. 15s. 3rd ed.) London: J. & A. Churchill Ltd. 1949.

**Contents:** 1. Bacteria. 2. True Fungi. 3. Control of Spoilage Micro-Organisms. 4. Containers. 5. Outline of Canning Operations. 6. Sources and Control of Contamination. 7. Principal Spoilage Organisms in Canned Foods. 8. Effects of Heat on Micro-Organisms. 9. Principles of Heat Processing. 10. Types of Spoilage. 11. Bacterial Food-Poisoning. 12. Microbiology of Sound Canned Foods. 13. Laboratory Examination of Canned Foods. 14. Examination of Raw Materials, Plant and Miscellaneous Methods. 15. Examination of Cans. Appendix. Index.

The author of this most useful little book is the Senior Bacteriologist to Messrs. Crosse & Blackwell Ltd. His 17 years' work in the laboratory aspects of the canning industry, and their application to the factories, permit him to speak authoritatively on these matters. The appearance of a third edition since 1943 bears testimony to its wide appeal.

Each chapter is set out in a most readable fashion, but where bacteriological examination of the food is required, the necessary procedures are simply stated while presuming that the investigators have an elementary knowledge of bacteriological technique and methods.

In this third edition the section dealing with the effects of heat on micro-organisms has been extended and a new chapter has been included dealing with the control of microbial contamination of the food products.

The main objects of the book are to present a short account of the principles involved in the processing of canned foods (using the term in its widest sense to include glass-packed products), to indicate the common causes of spoilage and the means by which they may be controlled. In this way it serves particularly the canning microbiologist, but it may also be recommended to the Public Health Officer and the Medical Bacteriologist.

#### FILTERABLE VIRUSES

*The Filterable Viruses (Supplement No. 2. Bergey's Manual of Determinative Bacteriology, Edition VI, 1948, with Revised and Enlarged Index).* By Francis O. Holmes. (Pp. 160 + xxiii. 20s.) London: Baillière, Tindall & Cox. 1948.

Those working with viruses will be interested to know that the supplement No. 2 of the sixth edition of Bergey's *Manual of Determinative Bacteriology* has been published as a separate, attractive volume under the editorship of Francis O. Holmes.

It consists of pages 1127 to 1286 of the larger *Manual* dealing with the *Filterable Viruses* and has its own index. Workers in this more restricted field of bacteriology will appreciate this more manageable publication.



## WATERS AND WATER SUPPLIES

*The Examination of Waters and Water Supplies.* Revised by Edwin W. Taylor, M.A., M.D., M.R.C.S., D.P.H. (Pp. 819 + xii. With 52 illustrations. 70s.) London: J. & A. Churchill Ltd. 6th ed. 1949.

**Contents:** Part I. Geological Considerations and Suitability of Water for Public Supply Purposes. Part II. Inspection of Waterworks and Sources of Supply. Part III. The Scope of Physical, Biological and Chemical Examinations. Part IV. Analytical Processes and Methods of Examination. Part V. Analytical Characters of Waters in Relation to their Geological Origin. Part VI. The Bacteriological Examination of Water. Part VII. Results and Standards in the Examination of Samples of Water. Part VIII. Water Supplies and Disease. Part IX. The Purification and Treatment of Water.

The sixth edition of the *Examination of Waters and Water Supplies* (Thresh, Beale and Suckling) has been completely revised and to a considerable extent rewritten by Edwin Windel Taylor, Deputy Director of Water Examination for the Metropolitan Water Board.

This has always been recognised as a standard textbook on the subject. In all respects it is most comprehensive, dealing, as it does, with every possible aspect of Water Supplies—from the point of view of the Water Engineer, the Medical Officer of Health, Water Authorities, etc.

This new edition has introduced all the most up-to-date information available, and now includes the newer culture media for the isolation of pathogens, which have come to the forefront since the war. Included also are some new illustrations.

This standard work should be in the hands of all sanitarians.

## CORRESPONDENCE

## AMOEBIASIS IN NATAL

*To the Editor:* I recently had occasion to visit Lourenco Marques at the invitation of the Government of the Colony of Mocambique. They were perturbed lest they had amoebiasis in the same way as it strikes Natal. I was able to assure them to the contrary. They have no comparable amoebiasis, either as regards incidence or as regards severity. This gives rise to some very interesting conjectures.

Why is it that two towns relatively close to each other should have such a differing incidence of a disease of this nature? The town with the lesser incidence is, if anything, more tropical and one would expect that the incidence of a 'tropical' condition would be higher. There is no doubt that we have something to learn from the Portuguese in this respect though it is my own wartime experience that endemic fulminating amoebic dysentery does not occur in towns such as Dar-es-Salaam or Mombasa. This visit confirmed my impression that Durban is forming a nidus for this condition and I took note of several differences between the two towns which might explain the difference in the incidence of the disease.

**Hygiene and Housing.** The peri-urban Bantu of Lourenco Marques live in somewhat ill-defined areas around the town and there is no sharp dividing line from those occupied by Europeans. The houses are, as a rule, constructed of reeds and each house is fenced off by a reed fence. There is generally room enough around each house for some form of agriculture. Disposal of faeces is into pits in a somewhat sandy soil and the water supply is mainly by purchase from local stores. There was no great prevalence of flies when I was there. This was attributed to extensive operations with DDT against mosquitoes. In general they had no 'Cato Manor' conditions.

**Diet.** The natives' habits differ considerably from those of the Natal Zulu mainly in that they eat fish, which is readily obtainable so that they are able to have an adequate supply of protein. Their cereal diet is much more varied than is that of the South African Native, as they eat (in addition to maize), manioc and rice. Much more use is made of vegetables than

in Durban. Alcohol, though not of the 'shimiyane' type, is regularly used by the natives, who also run illicit stills.

The Native life in the peri-urban areas is more primitive than that around Durban and the incidence of tuberculosis and typhoid is low, though parasitization is high. I had the opportunity of examining 121 stool specimens from 121 Africans and 40 specimens from 40 Europeans, all hospital cases. The results were as follows:—

## STOOL EXAMINATIONS

Total No. of Cases	Lourenco Marques		Durban 1946
	Africans 121	Europeans 40	Africans 4,852
<i>E. histolytica</i> ..	3 = 2%		1,335 = 28%
<i>E. coli</i> ..	34 = 28%	5	413 = 9%
<i>E. nana</i> ..	5 = 4%	1	298 = 6%
<i>I. butschlii</i> ..	6 = 5%	2	63 = 1%
<i>G. lamblia</i> ..	3 = 2%		36 = 1%
<i>C. mesnili</i> ..	1 = 1%		75 = 2%
<i>A. lumbricoides</i> ..	26 = 21%	4	1,822 = 38%
<i>T. trichiura</i> ..	36 = 30%	3	1,435 = 30%
<i>Ankylostoma spp.</i> ..	14 = 12%	1	122 = 3%
<i>Taenia spp.</i> ..	1 = 1%		180 = 4%
<i>S. mansoni</i> ..	2 = 1%		39 = 1%
<i>Stercoralis</i> ..	7 = 6%		81 = 2%
<i>Vermicularis</i> ..	1 = 1%	1	4
<i>H. radicularis</i> ..	1 = 1%		

Percentages are not given for the Europeans as the number examined was small.

These figures, though small, are comparable with the figures for a similar Native hospital population in Durban as they were examined by the same observer. The first and most striking figure is the incidence of the two commoner amoebae. In the Durban hospital population there is a higher percentage of *E. histolytica* than of *E. coli*, whereas the reverse holds true in Lourenco Marques—and, as a rule, elsewhere. Infection with *Ascaris* is also higher in Durban. These are the parasites carried by the ingestion of relatively recently passed dejecta. This forms, in part, an index to the faecal contamination of food. The incidence of those parasites which gain entrance through the skin such as *Ankylostoma* and *Strongyloides* is higher in Lourenco Marques, as would be expected where the country is flatter and the soil remains moist for longer periods.

The conclusion is clear about the lesson to be learnt from our neighbours.

R. Elsdon-Dew.

National Bank Chambers,  
West St.,  
Durban.  
1 February 1950.

## RACIAL DISCRIMINATION AND ADVERTISEMENTS

*To the Editor:* For how long will the Association compromise with fundamental principles and allow racially motivated advertisements to appear in the *S.A. Medical Journal*?

In your issue of 28 January, you allow the Municipality of Komgha, of whose existence very few people are aware, to demand that applicants for their highly (sic) remunerated post of M.O.H. state their racial affiliations.

I would like an answer whether:

1. It is legal for public bodies so to word their advertisements for vacancies as to imply racial discrimination!

2. It is right for the S.A. Medical Association, of which you are the mouthpiece, to acquiesce in this pernicious and vile doctrine!

Your pusillanimous acceptance of similar advertisements from medical practitioners is disgusting and a gross betrayal of the higher ethics of the medical profession.

B. Epstein.

104 Van Riebeeck Medical Buildings,  
Schoeman Street,  
Pretoria.  
7 February 1950.

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